

Fishery Data Series No. 12-30

**Kodiak Management Area Salmon Escapement and
Catch Sampling Results, 2011**

by

Michelle L. Moore

July 2012

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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Weights and measures (metric)		General	Mathematics, statistics
centimeter	cm	Alaska Administrative Code	<i>all standard mathematical signs, symbols and abbreviations</i>
deciliter	dL	all commonly accepted abbreviations	alternate hypothesis
gram	g	e.g., Mr., Mrs., AM, PM, etc.	base of natural logarithm
hectare	ha		catch per unit effort
kilogram	kg		coefficient of variation
kilometer	km		common test statistics
liter	L	professional titles	(F, t, χ^2 , etc.)
meter	m	e.g., Dr., Ph.D., R.N., etc.	confidence interval
milliliter	mL	at	correlation coefficient
millimeter	mm	compass directions:	(multiple)
		east	R
		north	correlation coefficient
		south	(simple)
		west	covariance
		copyright	degree (angular)
		corporate suffixes:	degrees of freedom
		Company	expected value
mile	mi	Corporation	greater than
nautical mile	nmi	Incorporated	greater than or equal to
ounce	oz	Limited	harvest per unit effort
pound	lb	District of Columbia	less than
quart	qt	et alii (and others)	less than or equal to
yard	yd	et cetera (and so forth)	logarithm (natural)
		exempli gratia	logarithm (base 10)
		(for example)	log
Time and temperature	d	e.g.	\log_2 , etc.
day		Federal Information Code	'
degrees Celsius	°C	id est (that is)	not significant
degrees Fahrenheit	°F	i.e.	null hypothesis
degrees kelvin	K	latitude or longitude	percent
hour	h	monetary symbols	probability
minute	min	(U.S.)	probability of a type I error
second	s	months (tables and figures): first three letters	(rejection of the null hypothesis when true)
Physics and chemistry		AC	α
all atomic symbols		registered trademark	probability of a type II error
alternating current	A	trademark	(acceptance of the null hypothesis when false)
ampere		United States	β
calorie	cal	(adjective)	second (angular)
direct current	DC	United States of America (noun)	standard deviation
hertz	Hz	U.S.C.	standard error
horsepower	hp	U.S. state	variance
hydrogen ion activity (negative log of)	pH		population
parts per million	ppm		sample
parts per thousand	ppt, ‰		Var
volts	V		var
watts	W		

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Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak

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ABSTRACT

Over 983,000 sockeye salmon *Oncorhynchus nerka* were enumerated through Alaska Department of Fish and Game (ADF&G) salmon counting weirs in the Kodiak Management Area (KMA) during 2011. Approximately 12,000 adult sockeye salmon were sampled for age, sex, and length (ASL) on major river systems in the KMA; these data were used to represent escapement age compositions. The predominant age classes in the escapement were age-2.2 (38.7%), -2.1 (14.2%), and -1.2 (12.2%) fish, but primary age classes varied by system. In addition to the collection of ASL data, genetics samples were collected from select systems in the KMA.

The 2011 commercial salmon catch in the KMA totaled roughly 20 million fish, including fish caught in the Kodiak Salmon Test Fishery and fish retained for personal use. The 2011 catches fell below the recent 5 and 10 year averages, but above last year's catch of 11.3 million fish. The harvest consisted of approximately 19,000 Chinook *O. tshawytscha*, 2.3 million sockeye, 190,000 coho *O. kisutch*, 16.6 million pink *O. gorbuscha*, and 825,000 chum *O. keta* salmon. Sockeye salmon were sampled by ADF&G for age determination from a variety of catch areas throughout the KMA. Approximately 14,000 scales were used to represent a combined harvest of nearly 829,000 sockeye salmon within these areas. ASL samples collected from the 2011 commercial catch revealed an age structure composed predominantly of age-2.2 (38.7%), -1.3 (27.6%), and -2.3 (14.9%) fish; however, primary age classes varied by section and district.

Sockeye salmon brood tables were updated for the Karluk, Ayakulik, Upper Station, and Frazer systems; 10-year average return-per-spawner estimates ranged from 1.2 for Ayakulik to 2.3 for the Upper Station early run. The examination of historical trends in sockeye salmon age compositions show tremendous variability within and among systems.

Key words: Kodiak, escapement, sockeye salmon, commercial harvest, age, historical trends.

INTRODUCTION

The Kodiak Management Area (KMA) encompasses western Gulf of Alaska waters surrounding the entire Kodiak Archipelago in addition to the waters along that portion of the Alaska Peninsula from Cape Douglas to Kilokak Rocks (Figure 1). There are about 800 anadromous salmon systems identified in the KMA (Johnson and Blanche 2010). All combined, these systems support five commercially important salmon species: Chinook *Oncorhynchus tshawytscha*, sockeye *O. nerka*, coho *O. kisutch*, pink *O. gorbuscha*, and chum *O. keta* salmon. About 49 of these systems support various sizes of sockeye salmon runs (Jackson et al. 2010).

Weirs operated by the Alaska Department of Fish and Game (ADF&G) are vital for salmon enumeration into many KMA streams, and provide the basis for inseason management actions regulating the commercial, sport, and subsistence fisheries in the area (Figure 2; Tiernan 2011). Additional streams are monitored by aerial and foot surveys to index pink, chum, coho, and remaining sockeye salmon escapements (Jackson et al. 2010).

The KMA is composed of seven commercial salmon fishing districts and 56 sections (Figures 1 and 3–7). The primary emphases of the ADF&G commercial salmon fishery harvest strategy are to promote maximum sustained yield for future salmon returns to the KMA, provide for orderly fisheries while maximizing harvest opportunities on the highest quality salmon, and to adhere to management plans adopted by the Alaska Board of Fisheries (Dinnocenzo and Jackson 2011). The targeted escapement goals for KMA salmon are: 8,000 to 17,000 Chinook, 750,000 to 1.7 million sockeye, 2.3 million to 5.8 million pink, 6,000 to 14,000 coho, and 300,000 chum salmon (Honnold et al. 2007; Nelson et al. 2005; Nemeth et al. 2010). Directed commercial fisheries occur on sockeye, pink, chum, and coho salmon, whereas Chinook salmon are not targeted. To open and close fisheries in season, managers use qualitative analyses of run timing, catch per unit effort statistics, species composition estimates, regulatory management plans, aerial survey estimates, test fishery results, and weir escapement counts (Dinnocenzo and Jackson 2011; Jackson et al. 2010).

ASL composition of KMA sockeye salmon escapements have been collected under the direction of various researchers and agencies since the mid 1920s. The Commercial Fisheries Division of ADF&G, initiated an expanded catch and escapement sampling program in 1985, focusing on sockeye salmon. The purpose of this program was to collect representative ASL data from major sockeye salmon systems as well as representative age data from selected commercial sockeye salmon harvests. These data continue to expand the KMA salmon baseline ASL database. Samples are used to reconstruct sockeye salmon runs, employ age marker analysis, conduct scale pattern analyses (SPA), and examine historical harvest proportions to estimate specific stock contributions to commercial fisheries in the KMA (Baer and Honnold 2002; Barrett and Nelson 1995; Foster 2006–2011a; Nelson 1999; Nelson and Barrett 1994; Nelson and Swanton 1996, 1997; Sagalkin 1999; Swanton 1992; Witteveen et al. 2005). Accordingly, these samples provide the foundation for preseason run forecasting and escapement goal evaluation.

The Kitoi Bay hatchery collects age and length data from chum salmon used for broodstock. Only mature (ripe) fish are utilized by the hatchery during their “egg-takes”, and are selected so that sex ratios are evenly distributed between male and female.

In 2010, a test fishery was initiated in order to gauge the abundance of early-run sockeye salmon returning to Karluk River well in advance of the fish entering the lagoon. Preliminary indications showed that the 2010 Kodiak Salmon Test Fishery pilot study was a useful indexing tool, and the test fishery was conducted again in 2011. This two day test fishery occurred in the Outer Karluk Section of the Southwest Kodiak District ranging from Cape Uyak to Pafco Point (Figure 6).

Tissue samples (axillary process) were collected from live adult salmon for genetic analysis. The majority of this year’s samples were collected for a project funded by the Alaska Sustainable Salmon Fund (AKSSF) for estimating and evaluating genetic variation within and among sockeye salmon populations on southwest Kodiak Island. Factors such as lake of origin, spawning habitat, spawning time, spatial isolation, and stocking history (Frazer Lake) will be evaluated for relative influence of the various factors on genetic diversity (M. B. Foster, Commercial Fisheries Biologist, ADF&G, Kodiak, unpublished memo). Stock composition of fish returning to the Frazer Lake and Ayakulik River drainages will also be assessed as a part of the project.

OBJECTIVES

This report presents a summary of the results of the 2011 KMA salmon sampling programs, including a compilation of all the data that was collected. While there is some interpretation and discussion of these data, this report does not provide a rigorous analysis, but rather aims to cover the following objectives:

1. Report the escapements by system and species in 2011 (emphasis is placed on sockeye salmon returning to systems; Table 2).
2. Provide ASL summaries from salmon sampled in both the escapement and from the commercial harvest. Historical trends and productivity (R/S) for select salmon stocks will be described.
3. Report the total catch by species in the KMA in 2011.
4. Reconstruct the 2011 run size for select stocks in the KMA.
5. Describe the results of the Kodiak salmon test fishery.
6. Summarize genetic sample collections from the KMA in 2011.

METHODS

ADULT SALMON ESCAPEMENT AND CATCH ESTIMATES

Salmon escapement was estimated by ADF&G using weirs at eight river systems in the KMA. The following systems are included in this report: Karluk, Ayakulik (Red Lake), Frazer (Dog Salmon Creek), Upper Station (South Olga Lakes), Afognak (Litnik), Saltery, and Pasagshak. The Division of Sport Fish operated weirs within the Buskin River system, but this smaller system falls outside the scope of this report.

Escapements at weirs were enumerated by field technicians and biologists using hand tally denominators as fish migrated upstream through aluminum panel gates (Tiernan 2011). Gates are normally closed to allow fish buildup and are intermittently opened to allow salmon enumeration and passage. Full descriptions of weirs are reported in the KMA Weir Descriptions and Salmon Escapement Report (Tiernan 2011). Counts were considered as complete censuses with minor adjustments made to the total counts only when high water events washed out weirs or after weir removal at season's end. When escapements were not directly counted, they were estimated by aerial or foot surveys conducted by field personnel.

KMA salmon catch numbers for the 2011 season were obtained from summary reports of individual harvest receipts (fish tickets). The fish ticket and escapement databases were edited by Kodiak area salmon management biologists prior to summary reports being generated on October 24, 2011.

ADULT SALMON ESCAPEMENT AND CATCH SAMPLING

Sockeye salmon escapements were sampled weekly for ASL data at weirs on the Karluk, Ayakulik, Upper Station, Frazer fish pass, and Pasagshak systems (Figure 2; Foster and Moore 2011). Frazer Lake salmon are initially enumerated at the Dog Salmon weir (near saltwater) and then counted again as they ascend the fish pass into Frazer Lake. Statistical (sampling) weeks and dates are presented in Table 1. Fish were collected using a live-box trap attached to the upstream side of the weir. During August and September, Karluk River samples were often collected with a beach seine in the lagoon when scale samples collected at the weir indicated heavy reabsorption or fish movement was nonexistent. Reabsorption occurs when spawning adults stop feeding and absorb protein from their bodies leaving only the center of their scales. Ideally, three samples of 80 fish were collected weekly on alternating days to meet the required weekly sample size of 240 fish. Within-week adjustments were made in the schedule when necessary to obtain the full sample. The weekly escapement sample size enabled all age classes to be simultaneously estimated within $\pm 6.5\%$ of the true proportions with 90% confidence (Thompson 1987). For Afognak and Saltery lakes, a goal of 600 fish (Table 2) was established, with the sampling effort distributed throughout the season and proportional to escapement counts (i.e., peaks in sampling effort occurred during peaks of escapement).

Specific commercial sockeye salmon catches were sampled weekly for age during commercial fisheries (Foster and Moore 2011; Table 3). The catch sample size of 400 fish per week enabled all age classes to be simultaneously estimated within $\pm 6.5\%$ of the true proportion with 95% confidence (Thompson 1987). Consistent with weir sampling, 240 fish per week were sampled for ASL data from the Spiridon Bay Special Harvest Area (SBSHA) to represent the Spiridon Lake sockeye salmon run (Thomsen 2011; Nelson and Swanton 1997). The desired seasonal catch sample of 400 commercially caught chum salmon were sampled by the Kitoi Bay Hatchery staff.

Catch samples were collected at the Port of Kodiak, Larsen Bay, Alitak, Olga Bay, SBSHA, Foul Bay SHA, and Waterfall Bay SHA (Figures 2–7). The catch sampling crew obtained fish ticket information before collecting samples to determine if the fish were exclusively harvested from the section designated to be sampled. If fish ticket data were not available, the sampling crew interviewed the processing facility dock foreman or tender operator. Once fish ticket information became available, the origin of the catch was confirmed.

All scales, when possible, were collected from the preferred area of each fish following procedures outlined by the International North Pacific Fisheries Commission (INPFC 1963). Scales were mounted on scale “gum” cards and impressions were made on cellulose acetate (Clutter and Whitesel 1956). Fish ages were assigned by examining scale impressions for annual growth increments using a microfiche reader fitted with a 48X lens following designation criteria established by Mosher (1968). Ages were recorded directly into the database via the Kodiak intranet salmon aging utility and are displayed in this report using European notation (Koo 1962), in which a decimal separates the number of winters spent in fresh water (after emergence) from the number of winters spent in salt water. The total age of the fish includes an additional year, that is not recorded, which represents the time between egg deposition and emergence of fry. Length measurements were taken from mid eye to tail fork (METF) in millimeters and sex was determined from external morphological characteristics. All ASL data were recorded on handheld digital sampling devices (Foster and Moore 2011). The ASL data summaries were computed for each escapement sample. Age and sex composition were estimated daily by interpolating between sampling events, then summarized weekly. When limited sampling events occurred throughout the season and the targeted goals were not achieved, the escapement age composition estimate was limited to only the statistical week that the sample was taken in. Length composition data were summarized by age and sex.

When weekly targeted catch sample sizes were obtained, total catch-at-age by area and day were estimated by multiplying the daily age composition of a particular sample by the daily catch from the corresponding catch area. Age composition of the catch from days not sampled was estimated using linear interpolation between sampling events. Descriptions of component programs used to compute ASL composition summaries can be found in database end user documentation (Unpublished ADF&G Commercial Fisheries Division database documentation obtained from Neil Moomey 2011, Kodiak, Alaska).

SOCKEYE SALMON RUN RECONSTRUCTION ESTIMATES

Spiridon Lake

The majority of Spiridon-bound sockeye salmon are assumed to be harvested within the SW Afognak Section and the NW Kodiak District. From 1998 through 2007, the number of Spiridon-bound sockeye salmon harvested in the SW Afognak Section and the NW Kodiak District was estimated using scale pattern analysis developed from 1994-1997. From 2008 through 2011, new methods were developed in response to changes in salmon run strength and harvest patterns.

Low Karluk Lake sockeye salmon abundance during the 2008 through 2011 seasons altered fishing time and harvest in the Central Section of the KMA. Research staff were concerned about the utility of using the Spiridon run reconstruction methods from 1998 through 2007, which were developed under a different fishery climate and broodstock. Therefore, for 2008 through 2011, sockeye salmon scale samples collected from certain statistical areas in the NW Kodiak District were visually analyzed for the presence of a distinct age-2.2 scale pattern found in Spiridon

bound fish. Specifically, sockeye salmon scales were examined from the Uyak Bay vicinity (statistical areas 254-10 to 254-40) and the Uganik Bay/Viekoda Bay/Kupreanof Strait vicinities (statistical areas 253-11 to 253-35). An appropriate percentage of the catch in these areas, evidenced by visual scale pattern analysis, was then attributed to the Spiridon run.

In 2011, roughly 6,000 individual scales from the commercial harvests in the NW Kodiak District were assessed for the presence of the Spiridon age-2.2 scale pattern, similar to the method used from 2008 to 2010. The percent of Spiridon-bound salmon in the SW Afognak harvest was estimated as half of the Uganik Bay/Viekoda Bay/Kupreanof Strait weekly percent as a result of the 1997 Spiridon scale pattern analysis (Nelson 1999). Results were compared to the stock separation SPA conducted from 1994 to 1997 and in 2008 (Foster 2008–2011; Nelson 1999; Nelson and Barrett 1994; Nelson and Swanton 1996–1997) to gauge the validity of the analysis.

This Spiridon-bound NW Kodiak District and SW Afognak Section catch estimates were combined with the SBSHA sockeye salmon catch to estimate the size of the 2011 Spiridon Lake run. The age composition of the SBSHA commercial harvest samples were applied to the total Spiridon Lake run to estimate the age structure.

Karluk Lake Early Run

The majority of Karluk sockeye salmon are assumed to be harvested within the NW and SW Kodiak Districts. A natural age marker (freshwater-age-3) was used to estimate the number by age class of sockeye salmon bound for Karluk Lake that were harvested in the westside Kodiak commercial fishery (Witteveen et al. 2005). Karluk early- and late-run sockeye salmon are temporally and genetically distinct. The early run typically escape in June and early July. Catch through 15 July and escapement through 21 July has historically been considered the early run; the six day difference between the two dates accounts for considerable lag time between harvest and escapement at Karluk weir.

The number of Karluk Lake bound sockeye salmon harvested in the Central, Inner and Outer Karluk, and Sturgeon sections through 15 July was estimated following the methods described in Barrett and Nelson (1995). The total Karluk Lake early-run estimate was calculated by summing the escapement (through 21 July) and assigned catch numbers by age class. Estimates by age class were assigned to the parent year (brood year) escapement and return-per-spawner (R/S) estimates were calculated by dividing annual returns by respective parent year escapements.

Karluk Lake Late Run

Karluk Lake late-run sockeye salmon typically escape in August and September. Catches after 15 July and escapements after 21 July have historically been considered the late run.

The number of Karluk Lake bound sockeye salmon harvested in the Central, Inner and Outer Karluk, and Sturgeon sections after 15 July were estimated following the methods described in Barrett and Nelson (1995). The total Karluk late-run estimate was determined by summing the escapement (after 21 July) and assigned catch numbers by age class. Estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements.

Ayakulik River (Red Lake)

The majority of sockeye salmon bound for Ayakulik are assumed to be harvested within the SW Kodiak District. Historically, the Ayakulik run reconstruction was accomplished by combining the Ayakulik River weir sockeye salmon escapement, 90% of the total Inner and Outer Ayakulik sections sockeye salmon catch, and 33% of the Halibut Bay Section sockeye salmon catch for the period from 21 June through 1 August by age class (Witteveen et al. 2005). Due to the age composition and timing of the Ayakulik-Halibut Bay catch samples, 100% of the Ayakulik-Halibut Bay sections harvest through 15 August and 33% of the after 15 August harvest were used to estimate the commercial catch attributable to the 2011 Ayakulik sockeye salmon run. Estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements. Although the Ayakulik sockeye salmon run reconstruction and brood tables are not separated into early- and late-run components, historically (prior to 1989) the run was treated as such. In addition, proposed reinstitution of separate early- and late-run goals for Ayakulik sockeye salmon were approved at the 2011 Alaska Board of Fisheries meeting in Kodiak. Thus, the 2011 Ayakulik age and sex composition tables contained in this report are separated into early and late components for comparative purposes; however, separate early- and late-run brood tables have not yet been developed. While Ayakulik early- and late-run sockeye salmon are genetically distinct, the two runs are not as temporally distinct as that observed at Karluk and Upper Station. Therefore the early- and late-run separation date of 15 July is fairly arbitrary, but was chosen for consistency with the other early- and late-run Kodiak sockeye salmon systems.

Frazer Lake (Dog Salmon Creek)

The majority of sockeye salmon bound for Frazer Lake are assumed to be harvested in the Alitak District. Run timing of Frazer Lake (Dog Salmon Creek) sockeye salmon coincides with both the early- and late- runs to Upper Station (Sagalkin 1999) and therefore run reconstructions for both are done concurrently. Based on previous studies (Swanton 1992, Tyler et al. 1986), 80% of the catch in the Cape Alitak and Humpy-Deadman sections and 95% of the catch in the Alitak, Moser, and Olga Bay sections were assumed to be of either Frazer Lake or Upper Station origin (Witteveen et al. 2005). The Frazer Lake catch estimate was based on a weekly proportion (using a running 3-day average) of Frazer/Upper Station harvest proportion escapement on 80% of the Cape Alitak Section harvest and 95% of the Alitak, Moser, and Olga Bay sections harvest. The Frazer/Upper Station estimate by week was used for catch by age unless the age class was exclusive to a system; this was based on scale samples collected weekly from the gillnet harvest. The differences between Frazer and Upper Station travel time between gillnet harvest and escapement were accounted for in the analysis (Foster 2003) and jacks were eliminated for standardization. The catch estimate for Frazer Lake, by age class, was added to escapement counted at the Dog Salmon Creek weir (based on age classes sampled at Frazer). Total run estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements.

South Olga Lakes (Upper Station) Early Run

The South Olga Lakes system (colloquially referred to as Upper Station) has a temporally and genetically distinct early- and late-run sockeye salmon component and each component was estimated separately in 2011. The early run typically escape in June and early July. Catch and escapement through 15 July has historically been considered the early run.

Upper Station early-run sockeye salmon are generally harvested along with the Frazer Lake run in the Alitak District during June and early July. The early-run catch estimate was based on a weekly proportion of Frazer/Upper Station escapement differences as described above for the Frazer Lake run reconstruction through 15 July. Total run estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements.

South Olga Lakes (Upper Station) Late Run

Upper Station late-run sockeye salmon typically escape in August and September. Catch and escapement after 15 July has historically been considered the late run.

The number of Upper Station late-run sockeye salmon harvested in the Alitak District after 15 July were estimated in an identical fashion as the early run until August 22. After August 22, all harvest in the Alitak District was attributed to Upper Station. The total Upper Station late-run estimate was determined by summing escapement counts after 15 July from the Upper Station weir and assigned catch numbers by age class. Estimates by age class were assigned to the parent year (brood year) escapement and R/S estimates were calculated by dividing annual returns by respective parent year escapements.

BROOD TABLES AND HISTORICAL TRENDS

All run reconstruction estimates were used to update their respective brood tables. Reliable and consistent run reconstruction data for Karluk Lake only date back to 1985; however, smaller more defined harvest areas for Ayakulik River, Upper Station, and Frazer Lake salmon provide reliable data back to the early 1970s. Total run estimates, and annual trends in freshwater and saltwater ages of sockeye salmon, by run year, were graphed for visual interpretation (Figures 8-16).

KODIAK SALMON TEST FISHERY

The purse seine test fishery was conducted in the Outer Karluk Section of the Southwest Kodiak District on 7 and 8 June. As required by the contract, a minimum of six standardized sets were conducted on each day of the test fishery. Each set was enumerated by species, and scale samples were collected for age determination from as many sockeye salmon as possible. Test fishery protocol follow the methods of Foster (2011b).

ADULT SALMON GENETICS SAMPLING

Genetics samples, in the form of axillary process clips, were collected from numerous salmon stocks in the Westward Region in 2011. The axillary process, or axillary spine, is located above the pelvic fin, and is cut from the fish using guillotine style pet nail trimmers. The axillary spines were removed from the left side of the fish and placed in a labeled 250 ml bottle of ethanol. After the collection was complete and 24 hours had passed, the bottles were refreshed with new ethanol and stored in a cool location until delivery to the ADF&G's Gene Conservation Laboratory in Anchorage for analysis. Fish sampled at weir sites were captured in the weir trap, while fish at all other sites were captured using a beach seine.

RESULTS

ADULT SALMON ESCAPEMENT ABUNDANCE, AGE, SEX, AND SIZE DATA

A total estimate of 983,081 sockeye salmon escaped through 8 weirs in the KMA during 2011 (Tables 4 and 5); this figure includes 180,603 fish that were originally counted through Dog

Salmon weir, but not the 134,642 fish that subsequently ascended the Frazer fish pass. A total of 12,157 of the escapement scale samples were ageable, representing a combined escapement of 937,120 sockeye salmon (Table 6). To simplify reporting hereafter, all estimates of age composition will be rounded to the nearest percent. In its entirety, the escapement was mainly composed of 5- (52%), 4- (27%) and 6- (16%) year-old fish. Primary age classes varied by system and area, but major overall age classes were 2.2 (39%) and 2.1 (14%), followed by smaller percentages of age-1.2, -1.3 and -3.2 (Table 6). Individual age, length, and sex composition summaries by escapement area are presented in Tables 7 through 33.

On Afognak Island, age-1.2 (40%) and -1.3 (29%) sockeye salmon dominated Afognak Lake escapement (Table 7). On the westside of Kodiak Island, escapement to Karluk Lake was dominated by age-2.2 (29%), -2.1 (18%) and -3.2 (18%) sockeye salmon in the early run (Table 10), and by age-2.2 (45%) and -3.2 (27%) sockeye salmon in the late run (Table 13). On the SW end of Kodiak Island, escapement to Ayakulik River was composed of age-1.2 (30%), -1.3 (27%) and -2.2 (21%) sockeye salmon in the early run (Table 15), and by age-2.2 (40%), -1.2 (22%), and -2.1 (17%) sockeye salmon in the late run (Table 18). In the Alitak District, escapement to Upper Station was dominated by age-2.2 (49%) and -2.3 (18%) in the early run (Table 20), and by age-2.2 (72%) sockeye salmon in the late-run (Table 23). Escapement to Frazer Lake was dominated by age-2.2 (47%) and -2.1 (36%) sockeye salmon (Table 25). On the eastside of Kodiak Island, escapement to Saltery Lake was dominated by age-1.3 (44%), -2.2 (27%) and -2.3 (16%) sockeye salmon (Table 28). Pasagshak River sockeye salmon were composed primarily of age-0.3 (42%), -1.3 (32%), and -2.1 (23%) fish (Table 31).

In 2011, for all ages combined, average body size of sockeye salmon was largest at Pasagshak River (551 mm; Table 32) and smallest at Frazer (420 mm; Table 26) primarily due to the abundance of jacks. For age-2.2 sockeye salmon, average body size was largest for the Ayakulik late run (546 mm) and smallest in Pasagshak (468 mm; Table 36). Age-2.3 sockeye salmon were largest at Pasagshak (583 mm) and smallest at Afognak (541 mm; Table 37). Sex percentages of sockeye salmon escapement samples ranged from 64% male for the Karluk early run (Table 12) to 39% male at Afognak (Table 9).

The age composition of Kitoi Bay hatchery chum salmon broodstock samples were age-0.3 (96%), -0.4 (2%) and -0.2 (1%) (Table 34). The average size of age-0.3 Kitoi Bay broodstock chum salmon sampled was roughly 549 mm for both males and females (Table 35).

COMMERCIAL SALMON CATCH ABUNDANCE AND AGE DATA

The 2011 commercial salmon catch in the KMA totaled 19,951,754 fish consisting of 18,615 Chinook, 2,269,302 sockeye, 190,483 coho, 16,648,792 pink, and 824,562 chum salmon (Tables 38 and 39). To most accurately represent run strength, these numbers include test fish harvests and personal use fish retained from commercial catch. The 2011 overall salmon harvest was less than the recent 10-year (2001–2010) average of 24.3 million fish. The greatest district harvest of commercial sockeye salmon occurred within the Mainland District, followed by the Northwest and Eastside Kodiak Districts (Table 39).

During the 2011 season, sockeye salmon harvested commercially were sampled (14,222 ageable scales) and used to represent the commercial catch from a variety of catch areas throughout the KMA (Table 40). These samples were used to represent a combined catch of over 829,000 sockeye salmon (Table 40). The overall sockeye salmon catch was predominantly composed of age-2.2 (39%), -1.3 (28%), and -2.3 (15%) fish; however, primary age classes varied by section

and district. Individual age, length, and sex composition summaries by catch are presented in Tables 41 through 51.

Uganik-Viekoda bays commercial sockeye salmon catch were predominately age-1.3 (47%), -2.3 (20%) and -2.2 (19%) fish (Table 41). Commercial harvests in Uyak Bay were predominantly composed of age-1.3 (40%), -2.2 (25%), and -2.3 (18%) sockeye salmon (Table 42).

The Spiridon Bay Special Harvest Area (SBSHA) catch was predominantly composed of age-2.2 (43%), -1.3 (25%), and -2.3 (18%) sockeye salmon (Table 43). On average, the sampled SBSHA sockeye salmon measured 557 mm in length (Table 44) and the estimated percentage of females in the SBSHA catch was about 57% (Table 45). The commercial sockeye salmon catch from Foul Bay SHA was predominantly age-1.3 (49%) and -1.2 (46%). Sockeye salmon harvested from Waterfall Bay SHA were predominantly age-1.2 (63%) fish. (Table 46). On average, sockeye salmon sampled at Foul Bay SHA measured 552 mm while Waterfall Bay SHA sockeye salmon measured 503 mm (Table 47).

The Ayakulik and Halibut Bay sections of the Southwest Kodiak District commercial sockeye salmon catches were dominated by age-2.2 (53%) and -1.2 (18%) fish (Table 48). The Outer Karluk section catch was composed primarily of age-2.2 (52%) and -3.2 (31%) fish (Table 49). The inside gillnet areas of Alitak Bay, Moser Bay, and Olga Bay sections showed catch samples that were predominantly composed of age-2.2 (66%), -2.3 (15%), and -1.3 (13%) sockeye salmon (Table 50). The outside purse seine areas of the Cape Alitak and Humpy-Deadman sections consisted of samples that were predominately age-1.3 (43%), -2.3 (28%), and -2.2 (18%; Table 51)

The only chum salmon harvest scale samples were taken in the Kitoi Bay Section, where the catch was predominately age-0.3 (97%) followed by -0.4 (2%) and -0.2 (1%) fish (Table 52).

SOCKEYE SALMON RUN RECONSTRUCTION ESTIMATES

Spiridon Lake

A total of 111,489 sockeye salmon were commercially harvested in the SBSHA during 2011 (Table 53). Using a SPA method in 2011 (visual), an estimated 67% of the Spiridon Lake bound sockeye salmon were harvested in the SBSHA. The 2011 results yielded a total harvest of 55,804 Spiridon Lake sockeye salmon in the Southwest Afognak Section and Northwest Kodiak District (not including the SBSHA) harvest combined. The 2011 estimated Spiridon Lake run of 167,293 sockeye salmon was below the estimated 10-year (2001–2010) average of 242,789 sockeye salmon (Figure 8).

Karluk Lake Early Run

The 2011 Karluk Lake early sockeye salmon total run estimate of 93,854 was predominantly composed of age-2.2 (29%), -3.2 (18%) and -2.1 (17%) fish (Table 54). The estimated 2011 Karluk early run showed a small increase from both 2010 and the historic low level observed in 2009 but the run was far below the recent 10-year average (2001–2010) of 468,133 fish (Figure 9). The 1995 through 2004 Karluk early-run sockeye salmon escapements have produced an estimated average return of 491,775 fish (range: 71,870-854,229) with an average R/S estimate of 1.7 (Table 55).

Karluk Lake Late Run

The Karluk Lake late sockeye salmon total run was estimated to be 267,014 fish in 2011 (Table 56). Age-2.2 (46%) and -3.2 (27%) fish were predominant. The 2011 run was less than the 2010 run estimate of 315,997 and well below the recent 10-year average (2001–2010) estimated run of 714,421 fish (Figure 10). The 1995 through 2004 Karluk Lake late-run sockeye salmon escapements have produced an estimated average return of 746,649 fish (range: 271,352–1,204,530) with an average R/S estimate of 1.8 (Table 57).

Ayakulik River (Red Lake)

The total run of sockeye salmon to the Ayakulik River in 2011 was estimated at 431,631 fish, with age-2.2 (38%) and -1.2 (24%) fish accounting for the majority of the run (Table 58). The 2011 run was less than the 2010 run estimate of 518,269 fish, but greater than the recent 10-year average (2001–2010) of 342,334 fish (Figure 11). The 1995–2004 Ayakulik sockeye salmon escapements have produced an estimated average return of 327,551 fish (range: 91,802–683,795) with an average R/S estimate of 1.2 (Table 59).

Frazer Lake (Dog Salmon Creek)

The 2011 Frazer Lake sockeye salmon total run estimate of 372,423 (Table 60) was predominantly composed of age-2.2 (58%), -2.1 (18%) and -2.3 (10%) fish. The 2011 run was much greater than the 2010 estimated run (165,112), and slightly above the recent 10-year average (2001–2010) of 361,288 fish (Figure 12). Frazer Lake sockeye salmon escapements from 1995–2004 have produced an estimated average return of 383,442 fish (range: 53,837–867,981) with an average R/S estimate of 2.2 (Table 61).

South Olga Lakes (Upper Station) Early Run

The 2011 Upper Station early sockeye salmon total run estimate of 48,361 was predominantly composed of age-2.2 (51%) and -2.3 (20%) fish (Table 62). This estimated run was less than the 2010 run of 55,164 fish and below the 10-year average (2001–2010) of 102,683 sockeye salmon (Figure 13). The 1995–2004 Upper Station early-run sockeye salmon escapements have produced an estimated average return of 113,475 fish (range: 19,289–254,768) with an average R/S estimate of 2.3 (Table 63).

South Olga Lakes (Upper Station) Late Run

The 2011 Upper Station sockeye salmon total late-run estimate of 170,768 fish was predominantly composed of age-2.2 (74%) fish (Table 64). The 2011 estimated run was less than the 2010 estimated run (204,458) and below the recent 10-year average (2001–2010) of 288,757 fish (Figure 14). Upper Station late-run salmon escapements from 1995–2004 have produced an estimated average return of 316,714 fish (range: 110,971–493,960) with an average R/S estimate of 1.8 (Table 65).

KODIAK SOCKEYE SALMON HISTORICAL TRENDS IN AGE AND SIZE

Karluk

Sockeye salmon freshwater residence time in Karluk Lake is typically 2 years, but often will extend to 3 years (Kyle et al. 1988; Rounsefell 1958). Since 1985, freshwater-age-2 sockeye salmon have predominated the annual runs with the exception of the early 1990s when

freshwater-age-3 fish spiked in abundance (Figure 15). Freshwater-age-3 fish, while not normally predominant since the inception of sampling for salmon age (1920s), have consistently been an important part of the Karluk Lake early and late runs. It is important to note that extended freshwater residence for sockeye salmon often signifies decreased overall lake productivity and subsequent adult salmon returns (Foerster 1968). Over the last 10 years freshwater-age-3 fish have normally comprised around 20% of the annual run. Recently, increases in the freshwater-age-3 component have been evident. Between 2003 and 2010, the freshwater-age-3 component of the early run increased from 13% to 47% (Figure 15). In 2011, the percentage of freshwater-age-3 sockeye in the Karluk Lake early run decreased to 36%, but was still above the historical average. In 2009 and 2010, the Karluk Lake late-run freshwater-age-3 component was unusually high at 90% and 73% respectively, but that number decreased significantly to 35% in 2011 (Figure 15).

Both early- and late-run Karluk Lake sockeye salmon typically spend two years in the ocean, making age-2.2 the dominant historical age class since the 1920s. The late run has historically had a lesser saltwater-age-3 component. Similar to 2010, the 2011 early and late runs had low levels of saltwater-age-3 fish (Figure 16).

Average size of age-2.2 sockeye salmon at Karluk Lake has generally declined since the mid 1980s, although the 2011 size is above average (Figure 17). In 2011 the early run age-2.2 fish averaged 506 mm, and the late run averaged 530 mm (Table 36 and Figure 17).

Ayakulik

Freshwater residence time for Ayakulik sockeye salmon has generally been 2 years but often fish will migrate to the ocean after spending only 1 year in Red Lake, as indicated by age samples of the escapement (Foster 2011a). On average, freshwater-age-2 sockeye salmon have composed 63% of the run while freshwater-age-1 fish have composed 34%. In 2011, roughly 54% of the run was freshwater-age-2 and 45% freshwater-age-1 fish (Figure 15).

Ayakulik River sockeye salmon commonly spend two years in the ocean but frequently rear at sea for three years. Similar to Karluk Lake, there is a 5- or 6-year cycle of increased proportions of saltwater-age-3 sockeye salmon (Figure 16). Age composition estimates from the 2011 run show saltwater-age-2 (62%) relatively high again as the cycle would predict.

In 2011 average size of age-2.2 and -2.3 sockeye salmon at Ayakulik was above average for both the early and late portion of the run; similar to Karluk, the average size at Ayakulik has generally declined since the 1980s (Tables 36-37 and Figure 17).

Frazer

Freshwater residence time for Frazer Lake sockeye salmon has typically been 2 years but often fish will migrate to the ocean after only 1 year (Barrett 1989; Foster 2010; Sagalkin 1999). While freshwater-age-2 fish still predominate the annual runs, there has been an increasing proportion of freshwater-age-3 fish in recent years (Figure 15). In 2011, the Frazer Lake sockeye salmon showed strong components of freshwater-age-2, followed by freshwater-age-1 and -3 fish (Figure 15).

Frazer Lake sockeye salmon commonly spend two years in the ocean but also rear at sea for one or three years (Figure 16). Inconsistent cycles, and highly variable saltwater ages present at Frazer are not surprising considering the recent colonization of this newly anadromous system.

The last ten years have shown considerable increases in the variability of the abundance of saltwater-age-1 fish, highlighted during the 2003, 2007, and 2010 runs in which saltwater-age-1 sockeye salmon (jacks) outnumbered the saltwater-age-2 and -3 fish (Figure 16). The 2011 run was predominately saltwater-age-2 (62%) and age-1 (22%) fish.

In 2011, average size of age-2.2 sockeye salmon at Frazer was near, but slightly below the historical average since 1985. (Table 36 and Figure 17).

Considering the short time that sockeye salmon have been naturally spawning in the lake, it is not surprising that the Frazer Lake freshwater- and saltwater-ages fluctuate more than other major Westward Region sockeye salmon stocks. The recent abundance of saltwater-age-1 sockeye salmon has raised concern in the Alitak Bay area, leading management and research staff to closely monitor returns to the system.

South Olga Lakes (Upper Station)

Freshwater residence time for Upper Station early run sockeye salmon has typically been 2 years but often fish will migrate to the ocean after only 1 year as indicated by age data from the escapement; in 2011 the proportions favored freshwater-age-2 fish but more so in the late run (73%) than the early run (53%). From the late 1980s to the mid 1990s, freshwater-age-2 fish were predominant in the early run, but the late run demonstrated strong components of freshwater-age-0 (Figure 15) sockeye salmon that coincided with extremely large runs (Foster 2011a). Since the mid 1990s, the early run has shown strong components of both freshwater-age-1 and age-2 fish, whereas the late run has been predominately freshwater-age-2 fish.

Upper Station sockeye salmon typically spend two years in the ocean but occasionally rear at sea for three years. There is a possible 4- or 5-year cycle of increased proportions of saltwater-age-3 sockeye salmon in the early run (Figure 16). In 2011, the Upper Station early run had predominantly saltwater-age-2 (63%) fish and the late run continued its trend of predominantly saltwater-age-2 fish (79%; Figure 16).

In 2011, the average size of age-2.2 and -2.3 sockeye salmon in both the early and late runs at Upper Station was slightly larger than the historical average (Tables 36-37 and Figure 17).

KODIAK SALMON TEST FISHERY

A total of 1,309 sockeye salmon and 1,288 chum salmon were harvested during the test fishery in 2011 (Table 66). On 7 June, twelve sets southbound at Cape Uyak, one set southbound at Pafco Point, and one set northbound at Cape Uyak were completed. On 8 June, a total of six sets were made southbound at Cape Uyak. The standardized sets (southbound at Cape Uyak) yielded an average of approximately 72 sockeye salmon per set in 2011, which is greater than the 2010 average of 58 sockeye salmon per set. Chum salmon were far more abundant in the 2011 test fishery, nearly equaling sockeye salmon catch. During the 2010 test fishery, chum salmon made up only 12% of the total catch. A summary of the test fishery is presented in Table 66.

Scale samples were collected, with the help of the fishing vessel crewmembers, from 850 sockeye salmon for age determination. The 2011 sockeye salmon test fish predominantly consisted of age-2.2 fish (34.1%), followed by age-1.3 (22.1%), -1.2 (14.2%), and -3.2 (10.3%; Table 67).

The estimate of Karluk River bound sockeye salmon in the harvest, as determined by percent of age 3.2 fish, was approximately 59 percent (determined from Karluk escapement age

compositions dating through 6/29/2011). There was a nearly identical proportional increase in test fishery catches and Karluk River early escapement between 2010 and 2011 (57.8%/71.8% to 71,000 fish/87,000 fish); this is a strong preliminary indication that the test fishery may be a useful tool in indexing the abundance of sockeye salmon migrating to Karluk River.

SALMON GENETICS SAMPLING

In all, 3,058 salmon genetic samples were collected during the 2011 season in the Kodiak Management Area (Table 68). Samples were collected from Red Lake, Karluk Lake, Akalura Lake, Horse Marine Lake, Ayakulik Weir, Dog Salmon Creek Weir, and Frazer Fish Pass for the southwest Kodiak Island sockeye salmon genetics project. Odd-year pink salmon samples were collected from male and female fish on the American River for a University of Washington genetics project.

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TABLES AND FIGURES

Table 1.—Statistical weeks and corresponding calendar dates, 2011.

Week	Calendar Dates	Week	Calendar Dates
10	1-Mar – 7-Mar	28	5-Jul – 11-Jul
11	8-Mar – 14-Mar	29	12-Jul – 18-Jul
12	15-Mar – 21-Mar	30	19-Jul – 25-Jul
13	22-Mar – 28-Mar	31	26-Jul – 1-Aug
14	29-Mar – 4-Apr	32	2-Aug – 8-Aug
15	5-Apr – 11-Apr	33	9-Aug – 15-Aug
16	12-Apr – 18-Apr	34	16-Aug – 22-Aug
17	19-Apr – 25-Apr	35	23-Aug – 29-Aug
18	26-Apr – 2-May	36	30-Aug – 5-Sep
19	3-May – 9-May	37	6-Sep – 12-Sep
20	10-May – 16-May	38	13-Sep – 19-Sep
21	17-May – 23-May	39	20-Sep – 26-Sep
22	24-May – 30-May	40	27-Sep – 3-Oct
23	31-May – 6-Jun	41	4-Oct – 10-Oct
24	7-Jun – 13-Jun	42	11-Oct – 17-Oct
25	14-Jun – 20-Jun	43	18-Oct – 24-Oct
26	21-Jun – 27-Jun	44	25-Oct – 31-Oct
27	28-Jun – 4-Jul	45	1-Nov – 7-Nov

Table 2.—Kodiak Management Area sockeye salmon escapement sampling schedule, 2011.

System Sample Location	Crew Supervision	Stream No.	Sampling Frequency	Date		Sample Size
				Starting	Ending	
<i>Major Systems</i>						
Karluk River weir	G. Spalinger	255-10-101	3 times per week	25-May	30-Sep	240 (weekly total)
Ayakulik River weir	G. Spalinger	256-15-201	3 times per week	25-May	31-Aug	240 (weekly total)
Upper Station weir	J. Dinnocenzo	257-30-304	3 times per week	25-May	30-Sep	240 (weekly total)
Frazer Lake fish pass	S. Thomsen	257-40-403	3 times per week	1-Jun	31-Aug	240 (weekly total)
<i>Minor Systems</i>						
Afognak (Litnik) Weir	S. Schroff/S. Thomsen	252-34-342	weekly	25-May	1-Aug	600 (season total)
Saltery Lake weir	S. Thomsen	259-41-415	weekly	25-Jun	1-Aug	600 (season total)
Pasagshak River Weir	M. Witteveen	259-43-411	3 times per week	10-Jun	14-Aug	240 (weekly total)

Table 3.—Kodiak Management Area sockeye and chum salmon catch sampling schedule, 2011.

District	Geographic Area	Species	Statistical Area(s)	Primary Sampling Site	Crew Leader	Sample		
						Frequency	Dates	Size
Afognak District								
	Waterfall Bay SHA ^a	Sockeye	251-84	Waterfall Bay	Shoutis	seasonally	6/1 – 7/1	600
	Foul Bay SHA ^a	Sockeye	251-41	Foul Bay	Shoutis	seasonally	6/1 – 6/9	600
	Kitoi Bay SHA ^a	Chum	253-32	Kitoi Bay	Aro	seasonally	6/1–7/1	400
NW Kodiak District								
	Uganik Bay (incl. Kupreanof)	Sockeye	253-11 – 253-35	Kodiak	Moore	weekly	6/1 – 9/5	400
	Uyak Bay	Sockeye	254-10 – 254-40	Larsen Bay	Moore	weekly	6/1 – 9/5	400
	Spiridon Bay SHA/Telrod Cove ^b	Sockeye	254-50	Telrod Cove	Buckhout	weekly	7/15 – 9/15	240
SW Kodiak District								
	Inner/Outer Karluk Section	Sockeye	255-10 – 255-20	Larsen Bay	Moore	when available	6/1 – 9/5	400
	Sturgeon Section	Sockeye	256-40	Kodiak	Moore	when available	6/1 – 9/5	400
	Halibut/Gurney Bay	Sockeye	256-25 – 256-30	Lazy Bay (Alitak)	Moore	when available	6/23 – 8/1	400
	Inner/Outer Ayakulik Section	Sockeye	256-10 – 256-20	Lazy Bay (Alitak)	Moore	when available	6/23 – 8/1	400
Alitak Bay District								
	Moser/Olga Bay	Sockeye	257-40 – 257-43	Olga Bay	Dias	weekly	6/5 – 8/31	400

^a Waterfall, Foul, and Kitoi bays special harvest areas (SHA) typically collect 600 samples (400 chum) total; the frequency depends on the harvest magnitude.

^b Spiridon Bay SHA collected 240 fish per week (consistent with escapement sampling).

Table 4.—Daily and cumulative (cum.) sockeye salmon escapement counted through weirs by system, Kodiak Management Area, 2011.

Date	System (weir)															
	Afognak		Karluk		Ayakulik		Upper Station		Dog Salmon Creek		Frazer fish pass		Saltery		Pasagshak	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
5/17	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/18	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/19	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/20	14	40	0	0	0	0	0	2	2	0	0	0	0	0	0	0
5/21	0	40	0	0	0	0	45	47	0	0	0	0	0	0	0	0
5/22	16	56	1	1	0	0	0	47	0	0	0	0	0	0	0	0
5/23	0	56	2	3	0	0	101	148	0	0	0	0	0	0	0	0
5/24	0	56	1	4	0	0	0	148	0	0	0	0	0	0	0	0
5/25	0	56	26	30	7	7	150	298	0	0	0	0	0	0	0	0
5/26	0	56	45	75	74	81	200	498	0	0	0	0	0	0	0	0
5/27	0	56	71	146	424	505	478	976	0	0	0	0	0	0	0	0
5/28	800	856	169	315	7	512	373	1,349	0	0	0	0	0	0	0	0
5/29	1,353	2,209	412	727	114	626	246	1,595	0	0	0	0	0	0	0	0
5/30	255	2,464	162	889	155	781	563	2,158	0	0	0	0	0	0	0	0
5/31	1,438	3,902	72	961	86	867	510	2,668	3	3	0	0	0	0	0	0
6/1	1,885	5,787	375	1,336	4,163	5,030	1,351	4,019	1	4	0	0	0	0	0	0
6/2	2,159	7,946	1,324	2,660	2,107	7,137	1,116	5,135	13	17	0	0	0	0	0	0
6/3	1,507	9,453	1,122	3,782	191	7,328	104	5,239	0	17	0	0	0	0	0	0
6/4	885	10,338	794	4,576	600	7,928	2,410	7,649	3	20	0	0	0	0	0	0
6/5	2,151	12,489	5,845	10,421	350	8,278	1,370	9,019	1	21	0	0	0	0	0	0
6/6	4,353	16,842	2,352	12,773	400	8,678	900	9,919	1	22	0	0	0	0	0	0
6/7	428	17,270	5,585	18,358	1,000	9,678	687	10,606	0	22	0	0	0	0	0	0
6/8	2,636	19,906	1,158	19,516	1,600	11,278	1,777	12,383	10	32	0	0	0	0	0	0
6/9	1,058	20,964	979	20,495	1,400	12,678	1,669	14,052	4,213	4,245	0	0	0	0	0	0
6/10	690	21,654	2,643	23,138	1,426	14,104	1,717	15,769	1,564	5,809	0	0	0	0	0	0
6/11	2,730	24,384	7,029	30,167	738	14,842	711	16,480	780	6,589	0	0	0	0	0	0
6/12	1,449	25,833	2,071	32,238	9,586	24,428	337	16,817	799	7,388	0	0	0	0	0	0
6/13	941	26,774	8,604	40,842	51,088	75,516	1,619	18,436	1,082	8,470	1	1	0	0	150	150
6/14	932	27,706	2,960	43,802	6,791	82,307	732	19,168	694	9,164	0	1	0	0	1	151
6/15	13	27,719	6,042	49,844	2,949	85,256	689	19,857	2,773	11,937	7	8	0	0	0	151
6/16	1,085	28,804	2,346	52,190	1,660	86,916	81	19,938	351	12,288	0	8	0	0	1	152
6/17	340	29,144	2,182	54,372	3,433	90,349	294	20,232	3,189	15,477	0	8	0	0	0	152
6/18	469	29,613	1,786	56,158	1,260	91,609	1,006	21,238	444	15,921	1	9	0	0	7	159

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Table 4.—Page 2 of 4.

Date	System (weir)															
	Afognak		Karluk		Ayakulik		Upper Station		Dog Salmon Creek		Frazer fish pass		Saltery		Pasagshak	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/19	1,244	30,857	2,109	58,267	6,772	98,381	438	21,676	3,159	19,080	40	49	19	19	0	159
6/20	955	31,812	4,614	62,881	6,807	105,188	144	21,820	6,232	25,312	56	105	109	128	0	159
6/21	1,149	32,961	420	63,301	2,833	108,021	2,374	24,194	3,759	29,071	116	221	364	492	13	172
6/22	1,914	34,875	1,445	64,746	4,926	112,947	576	24,770	6,471	35,542	289	510	283	775	5	177
6/23	162	35,037	114	64,860	454	113,401	81	24,851	1,287	36,829	419	929	137	912	42	219
6/24	918	35,955	343	65,203	6,454	119,855	1,038	25,889	606	37,435	406	1,335	263	1,175	0	219
6/25	187	36,142	4,913	70,116	1,300	121,155	213	26,102	1,038	38,473	71	1,406	37	1,212	1	220
6/26	385	36,527	744	70,860	7,283	128,438	268	26,370	9,437	47,910	740	2,146	209	1,421	8	228
6/27	649	37,176	2,080	72,940	111	128,549	117	26,487	88	47,998	99	2,245	203	1,624	2	230
6/28	383	37,559	219	73,159	2,723	131,272	108	26,595	1,411	49,409	240	2,485	479	2,103	1,385	1,615
6/29	127	37,686	908	74,067	2,773	134,045	459	27,054	5,069	54,478	6,233	8,718	173	2,276	556	2,171
6/30	165	37,851	2,090	76,157	6,121	140,166	340	27,394	2,490	56,968	11,344	20,062	150	2,426	231	2,402
7/1	65	37,916	1,262	77,419	4,262	144,428	82	27,476	6,612	63,580	2,522	22,584	94	2,520	79	2,481
7/2	12	37,928	1,427	78,846	11,268	155,696	387	27,863	13,920	77,500	4,946	27,530	884	3,404	347	2,828
7/3	695	38,623	1,172	80,018	6,657	162,353	321	28,184	2,408	79,908	981	28,511	780	4,184	119	2,947
7/4	191	38,814	942	80,960	2,435	164,788	7	28,191	7,002	86,910	4,829	33,340	308	4,492	183	3,130
7/5	287	39,101	801	81,761	1,278	166,066	73	28,264	16,216	103,126	6,913	40,253	1,654	6,146	165	3,295
7/6	84	39,185	1,532	83,293	391	166,457	21	28,285	4,353	107,479	1,341	41,594	1,172	7,318	10	3,305
7/7	166	39,351	217	83,510	57	166,514	34	28,319	170	107,649	367	41,961	397	7,715	47	3,352
7/8	172	39,523	253	83,763	714	167,228	19	28,338	2,108	109,757	627	42,588	154	7,869	42	3,394
7/9	928	40,451	458	84,221	2,215	169,443	5	28,343	4,167	113,924	19,109	61,697	167	8,036	605	3,999
7/10	34	40,485	167	84,388	672	170,115	14	28,357	611	114,535	1,278	62,975	172	8,208	442	4,441
7/11	168	40,653	202	84,590	427	170,542	8	28,365	4,542	119,077	213	63,188	222	8,430	54	4,495
7/12	76	40,729	891	85,481	2,222	172,764	56	28,421	4,252	123,329	1,965	65,153	987	9,417	1,724	6,219
7/13	100	40,829	846	86,327	394	173,158	68	28,489	6,405	129,734	11,604	76,757	544	9,961	245	6,464
7/14	38	40,867	260	86,587	2,183	175,341	75	28,564	5,202	134,936	7,596	84,353	2,410	12,371	444	6,908
7/15	123	40,990	55	86,642	2,139	177,480	195	28,759	2,221	137,157	1,623	85,976	1,183	13,554	359	7,267
7/16	0	40,990	76	86,718	12,614	190,094	97	28,856	4,481	141,638	1,581	87,557	217	13,771	125	7,392
7/17	18	41,008	93	86,811	14,730	204,824	63	28,919	3,564	145,202	4,434	91,991	256	14,027	320	7,712
7/18	3	41,011	33	86,844	1,735	206,559	143	29,062	2,714	147,916	900	92,891	358	14,385	447	8,159
7/19	5	41,016	67	86,911	88	206,647	24	29,086	1,164	149,080	992	93,883	371	14,756	64	8,223
7/20	12	41,028	99	87,010	231	206,878	10	29,096	3,254	152,334	16,193	110,076	226	14,982	100	8,323

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Table 4.—Page 3 of 4.

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Date	System (weir)															
	Afognak		Karluk		Ayakulik		Upper Station		Dog Salmon Creek		Frazer fish pass		Saltery		Pasagshak	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/21	3	41,031	39	87,049	299	207,177	345	29,441	1,018	153,352	1,735	111,811	426	15,408	16	8,339
7/22	0	41,031	40	87,089	916	208,093	1,497	30,938	1,420	154,772	1,701	113,512	1,149	16,557	0	8,339
7/23	14	41,045	46	87,135	3,055	211,148	601	31,539	3,326	158,098	512	114,024	985	17,542	45	8,384
7/24	5	41,050	61	87,196	1,700	212,848	227	31,766	1,179	159,277	66	114,090	607	18,149	39	8,423
7/25	14	41,064	32	87,228	432	213,280	5	31,771	1,172	160,449	273	114,363	1,350	19,499	152	8,575
7/26	21	41,085	16	87,244	3	213,283	3	31,774	299	160,748	178	114,541	1,126	20,625	314	8,889
7/27	105	41,190	993	88,237	109	213,392	49	31,823	1,569	162,317	721	115,262	1,230	21,855	137	9,026
7/28	3	41,193	64	88,301	229	213,621	250	32,073	825	163,142	367	115,629	1,590	23,445	889	9,915
7/29	6	41,199	68	88,369	123	213,744	554	32,627	3,241	166,383	242	115,871	336	23,781	229	10,144
7/30	2	41,201	439	88,808	406	214,150	9	32,636	652	167,035	542	116,413	1,580	25,361	1,006	11,150
7/31	21	41,222	86	88,894	15,719	229,869	96	32,732	1,551	168,586	364	116,777	1,279	26,640	3	11,153
8/1	716	41,938	29	88,923	5,006	234,875	1,385	34,117	245	168,831	90	116,867	276	26,916	74	11,227
8/2	164	42,102	505	89,428	14,668	249,543	3,745	37,862	691	169,522	306	117,173	825	27,741	173	11,400
8/3	953	43,055	132	89,560	450	249,993	2,256	40,118	728	170,250	587	117,760	112	27,853	290	11,690
8/4	27	43,082	10	89,570	420	250,413	3	40,121	411	170,661	617	118,377	212	28,065	0	11,690
8/5	96	43,178	16	89,586	300	250,713	46	40,167	1,790	172,451	301	118,678	314	28,379	30	11,720
8/6	476	43,654	15	89,601	800	251,513	72	40,239	234	172,685	117	118,795	872	29,251	142	11,862
8/7	39	43,693	63	89,664	650	252,163	1,220	41,459	1,370	174,055	90	118,885	496	29,747	35	11,897
8/8	94	43,787	15	89,679	1,100	253,263	98	41,557	131	174,186	93	118,978	91	29,838	57	11,954
8/9	308	44,095	87	89,766	500	253,763	58	41,615	292	174,478	651	119,629	20	29,858	287	12,241
8/10	2	44,097	121	89,887	373	254,136	1,719	43,334	252	174,730	134	119,763	910	30,768	47	12,288
8/11	23	44,120	204	90,091	253	254,389	7,885	51,219	468	175,198	144	119,907	0	30,768	70	12,358
8/12	429	44,549	19	90,110	513	254,902	6,074	57,293	510	175,708	330	120,237	0	30,768	90	12,448
8/13	0	44,549	48	90,158	36	254,938	6,541	63,834	483	176,191	402	120,639	0	30,768	105	12,553
8/14	23	44,572	161	90,319	1,090	256,028	6,774	70,608	1,020	177,211	439	121,078	0	30,768	79	12,632
8/15	1	44,573	18	90,337	14	256,042	6,359	76,967	1,004	178,215	267	121,345	0	30,768	113	12,745
8/16	3	44,576	862	91,199	124	256,166	5,345	82,312	148	178,363	560	121,905	0	30,768	657	13,402
8/17	2	44,578	515	91,714	93	256,259	3,734	86,046	136	178,499	547	122,452	0	30,768	0	13,402
8/18	3,734	48,312	59	91,773	150	256,409	4,406	90,452	95	178,594	168	122,620	0	30,768	0	13,402
8/19	578	48,890	1,688	93,461	466	256,875	887	91,339	886	179,480	3,900	126,520	0	30,768	0	13,402
8/20	303	49,193	127	93,588	1,575	258,450	703	92,042	123	179,603	1,758	128,278	0	30,768	0	13,402
8/21	0	49,193	21	93,609	750	259,200	1,048	93,090	950	180,553	318	128,596	0	30,768	0	13,402

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Table 4.—Page 4 of 4.

Date	System (weir)															
	Afognak		Karluk		Ayakulik		Upper Station		Dog Salmon Creek		Frazer fish pass		Saltery		Pasagshak	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
8/22	0	49,193	20	93,629	210	259,410	1,464	94,554	50	180,603	150	128,746	0	30,768	0	13,402
8/23	0	49,193	49	93,678	115	259,525	4,058	98,612	0	180,603	96	128,842	0	30,768	0	13,402
8/24	0	49,193	68	93,746	66	259,591	2,807	101,419	0	180,603	105	128,947	0	30,768	0	13,402
8/25	0	49,193	51,239	144,985	117	259,708	1,146	102,565	0	180,603	82	129,029	0	30,768	0	13,402
8/26	0	49,193	15,336	160,321	57	259,765	4,299	106,864	0	180,603	985	130,014	0	30,768	0	13,402
8/27	0	49,193	5,010	165,331	195	259,960	2,341	109,205	0	180,603	400	130,414	0	30,768	0	13,402
8/28	0	49,193	529	165,860	52	260,012	1,955	111,160	0	180,603	206	130,620	0	30,768	0	13,402
8/29	0	49,193	106	165,966	259	260,271	2,598	113,758	0	180,603	323	130,943	0	30,768	0	13,402
8/30	0	49,193	151	166,117	90	260,361	1,352	115,110	0	180,603	1,458	132,401	0	30,768	0	13,402
8/31	0	49,193	202	166,319	55	260,416	2,735	117,845	0	180,603	297	132,698	0	30,768	0	13,402
9/1	0	49,193	108	166,427	50	260,466	500	118,345	0	180,603	76	132,774	0	30,768	0	13,402
9/2	0	49,193	152	166,579	64	260,530	2,391	120,736	0	180,603	452	133,226	0	30,768	0	13,402
9/3	0	49,193	4,960	171,539	168	260,698	1,932	122,668	0	180,603	272	133,498	0	30,768	0	13,402
9/4	0	49,193	472	172,011	74	260,772	1,140	123,808	0	180,603	129	133,627	0	30,768	0	13,402
9/5	0	49,193	341	172,352	42	260,814	35	123,843	0	180,603	431	134,058	0	30,768	0	13,402
9/6	0	49,193	34,077	206,429	113	260,927	1,963	125,806	0	180,603	411	134,469	0	30,768	0	13,402
9/7	0	49,193	12,749	219,178	79	261,006	1,139	126,945	0	180,603	96	134,565	0	30,768	0	13,402
9/8	0	49,193	15,879	235,057	95	261,101	377	127,322	0	180,603	77	134,642	0	30,768	0	13,402
9/9	0	49,193	18,540	253,597	40	261,141	722	128,044	0	180,603	0	134,642	0	30,768	0	13,402
9/10	0	49,193	6,198	259,795	0	261,141	749	128,793	0	180,603	0	134,642	0	30,768	0	13,402
9/11	0	49,193	759	260,554	0	261,141	901	129,694	0	180,603	0	134,642	0	30,768	0	13,402
9/12	0	49,193	443	260,997	0	261,141	547	130,241	0	180,603	0	134,642	0	30,768	0	13,402
9/13	0	49,193	231	261,228	0	261,141	20	130,261	0	180,603	0	134,642	0	30,768	0	13,402
9/14	0	49,193	71	261,299	0	261,141	250	130,511	0	180,603	0	134,642	0	30,768	0	13,402
9/15	0	49,193	27,492	288,791	0	261,141	141	130,652	0	180,603	0	134,642	0	30,768	0	13,402
9/16	0	49,193	5,187	293,978	0	261,141	0	130,652	0	180,603	0	134,642	0	30,768	0	13,402
9/17	0	49,193	896	294,874	0	261,141	0	130,652	0	180,603	0	134,642	0	30,768	0	13,402
9/18	0	49,193	143	295,017	0	261,141	0	130,652	0	180,603	0	134,642	0	30,768	0	13,402
9/19	0	49,193	58	295,075	0	261,141	0	130,652	0	180,603	0	134,642	0	30,768	0	13,402
9/20	0	49,193	7,721	302,796	0	261,141	0	130,652	0	180,603	0	134,642	0	30,768	0	13,402
9/21	0	49,193	521	303,317	0	261,141	0	130,652	0	180,603	0	134,642	0	30,768	0	13,402
9/22	0	49,193	14,005	317,322	0	261,141	0	130,652	0	180,603	0	134,642	0	30,768	0	13,402
Totals	49,193		317,322		261,141		130,652		180,603		134,642		30,768		13,402	

Note: Post-weir estimates of escapement were made for Pasagshak (8/16)

Table 5.—Fish weir installation and removal dates and salmon escapements for the major systems with fish weirs in the Kodiak Management Area, 2011.

Weir Locations	Dates		Species ^a					Totals
	Installed	Removed	Chinook	Sockeye	Coho	Pink	Chum	
Karluk River	5/22	9/22	3,420	317,322	14,924	158,740	78	494,484
Ayakulik River	5/24	9/9	4,316	261,141	17,016	20,428	101	303,002
Dog Salmon Creek	5/25	8/22	83	180,603	115	21,343	2,607	204,751
Frazer Lake fish pass ^b	6/13	9/8	27	134,642	0	7	0	134,676
Upper Station	5/20	9/16	0	130,652	6,317	21,585	1	158,555
Afognak River	5/17	8/20	0	49,193	2,700	4,241	4	56,138
Saltery River	6/19	8/10	1	30,768	0	5,135	0	35,904
Pasagshak River	6/13	8/16	0	13,402	0	113	26	13,541
Totals			7,820	983,081	41,072	231,585	2,817	1,266,375

^a Counts include post weir estimates after weirs were removed.

^b Salmon counted at the Frazer fish pass were initially counted at Dog Salmon weir. All species counted at Frazer are not included in totals, although the Frazer fish pass count is considered the best escapement estimate of sockeye salmon since some sockeye salmon that pass Dog Salmon weir fail to get counted at Frazer fish pass and may not spawn.

Table 6.—Estimated age composition of sockeye salmon escapements by system, Kodiak Management Area, 2011.

System	Sample Size	Age											Total	
		1.1	0.3	1.2	2.1	1.3	2.2	3.1	2.3	3.2	3.3	Other ^a		
Afognak Lake (Litnik)	750	Percent	4.2	0.0	40.2	3.3	28.5	8.8	0.0	14.7	0.0	0.0	0.3	100.0
		Numbers	2,086	0	19,771	1,606	14,015	4,340	0	7,222	0	0	152	49,193
Karluk Lake														
Early run	1,717	Percent	0.4	0.0	4.0	18.4	4.2	28.7	7.5	8.1	17.6	10.7	0.5	100.0
		Numbers	338	18	3,466	16,028	3,669	24,978	6,486	7,013	15,337	9,316	399	87,049
Late run	1,240	Percent	0.0	0.8	1.2	7.8	0.6	45.2	5.0	7.8	27.0	2.9	1.6	100.0
		Numbers	0	1,957	2,755	17,910	1,304	104,155	11,606	17,855	62,285	6,788	3,660	230,273
Ayakulik River														
Early run	1,548	Percent	6.1	0.5	30.0	9.6	26.7	20.9	0.0	6.1	0.2	0.0	0.0	100.0
		Numbers	10,747	828	53,186	16,979	47,381	37,056	26	10,869	327	0	81	177,480
Late run	647	Percent	7.4	0.1	21.5	16.6	10.3	40.3	0.1	3.3	0.1	0.0	0.4	100.0
		Numbers	6,165	83	18,021	13,860	8,589	33,677	81	2,746	65	0	373	83,661
Upper Station														
Early run	1,013	Percent	3.1	0.0	9.4	15.5	4.6	49.2	0.0	18.0	0.2	0.0	0.0	100.0
		Numbers	904	8	2,689	4,444	1,332	14,164	4	5,168	46	0	0	28,759
Late run	1,768	Percent	1.9	0.2	7.5	10.0	2.1	71.5	0.1	4.4	1.9	0.1	0.3	100.0
		Numbers	1,938	155	7,693	10,156	2,120	72,839	141	4,484	1,912	127	328	101,893
Frazer	2,251	Percent	2.5	0.0	2.7	35.9	1.6	46.6	4.0	5.7	0.9	0.0	0.1	100.0
		Numbers	3,371	27	3,604	48,300	2,183	62,700	5,442	7,623	1,194	0	198	134,642
Saltery Lake	501	Percent	0.0	0.1	10.1	0.9	44.2	27.4	0.0	16.2	0.0	0.0	1.1	100.0
		Numbers	0	40	3,093	262	13,598	8,444	0	4,996	0	0	334	30,768
Pasagshak River	722	Percent	0.0	41.6	0.2	23.4	32.0	0.3	0.0	0.7	0.0	0.0	1.8	100.0
		Numbers	0	5,570	33	3,140	4,294	34	0	95	0	0	236	13,402
Totals	12,157	Percent	2.7	0.9	12.2	14.2	10.5	38.7	2.5	7.3	8.7	1.7	0.6	100.0
		Numbers	25,549	8,687	114,312	132,684	98,486	362,387	23,785	68,072	81,166	16,231	5,761	937,120

^a The “Other” age class listed in the table above consists of age-0.1, -0.2, -0.4, -1.4, -4.1, -2.4, -4.2, -4.3, and -3.4.

Table 7.—Estimated age composition of Afognak Lake (Litnik) sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size		Age							Total		
			1.1	1.2	1.3	1.4	2.1	2.2	2.3			
21 5/17–5/23	0	Percent	0.0	31.9	36.9	0.7	0.0	9.2	21.3	100.0		
		Numbers	0	18	21	0	0	5	12	56		
22 5/24–5/30	0	Percent	0.0	31.9	36.9	0.7	0.0	9.2	21.3	100.0		
		Numbers	0	769	888	17	0	222	512	2,408		
23 5/31–6/06	141	Percent	0.0	32.3	36.4	0.7	0.0	9.3	21.3	100.0		
		Numbers	6	4,683	5,170	95	6	1,345	3,072	14,378		
24 6/07–6/13	291	Percent	0.5	38.2	29.7	0.4	0.4	10.2	20.7	100.0		
		Numbers	47	3,796	2,937	36	40	1,017	2,059	9,932		
25 6/14–6/20	136	Percent	1.8	51.2	22.2	0.1	1.2	10.8	12.6	100.0		
		Numbers	97	2,612	1,103	3	64	545	614	5,038		
26 6/21–6/27	147	Percent	5.3	49.9	21.7	0.0	3.3	9.1	10.6	100.0		
		Numbers	251	2,721	1,153	0	151	507	581	5,364		
27 6/28–7/04	35	Percent	12.1	44.5	22.6	0.0	9.4	6.5	4.9	100.0		
		Numbers	203	725	371	0	158	105	76	1,638		
28 7/05–7/11	0	Percent	14.3	42.9	22.9	0.0	11.4	5.7	2.9	100.0		
		Numbers	263	788	420	0	210	105	53	1,839		
29 7/12–7/18	0	Percent	14.3	42.9	22.9	0.0	11.4	5.7	2.9	100.0		
		Numbers	51	153	82	0	41	20	10	358		
30 7/19–7/21	0	Percent	14.3	42.9	22.9	0.0	11.4	5.7	2.9	100.0		
		Numbers	8	23	12	0	6	3	2	53		
31 7/26–8/01	0	Percent	14.3	42.9	22.9	0.0	11.4	5.7	2.9	100.0		
		Numbers	125	375	200	0	100	50	25	874		
32 8/02–8/08	0	Percent	14.3	42.9	22.9	0.0	11.4	5.7	2.9	100.0		
		Numbers	264	792	423	0	211	106	53	1,849		
33 8/9–8/15	0	Percent	14.3	42.9	22.9	0.0	11.4	5.7	2.9	100.0		
		Numbers	112	337	180	0	90	45	22	786		
34 8/16–8/22	0	Percent	14.3	42.9	22.9	0.0	11.4	5.7	2.9	100.0		
		Numbers	660	1,980	1,056	0	528	264	132	4,620		
Total		750	Percent	4.2	40.2	28.5	0.3	3.3	8.8	14.7	100.0	
			Numbers	2,086	19,771	14,015	152	1,606	4,340	7,222	49,193	

Table 8.—Length composition of Afognak Lake (Litnik) sockeye salmon escapement samples by age and sex, 2011.

	Age							
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Total
Females								
Mean Length (mm)	—	482	533	—	—	484	535	507
SE	—	2	2	—	—	4	2	3
Range	—	387–590	449–584	—	—	402–546	481–574	387–590
Sample Size	0	194	141	0	0	50	82	467
Males								
Mean Length (mm)	338	506	555	516	346	506	552	509
SE	5	3	3	20	7	8	4	4
Range	310–382	428–575	469–598	496–536	308–378	417–587	446–591	308–598
Sample Size	15	114	63	2	10	23	43	270
All Fish								
Mean Length (mm)	338	490	540	516	346	490	541	507
SE	5	2	2	20	7	4	2	2
Range	310–382	387–590	449–598	496–536	308–378	402–587	446–591	308–598
Sample Size	15	317	205	2	10	74	126	749

Note: Length composition for all fish includes fish of undetermined sex

Table 9.—Estimated sex composition of Afognak Lake (Litnik) sockeye salmon escapement by week, 2011.

Week	Dates	Sample Size			Escapement					
		Females	Males	Total	Percent		Number			
					Females	Males	Females	Males	Total	
21	5/17–5/23	0	0	0	63.9	36.1	36	20	56	
22	5/24–5/30	0	0	0	63.9	36.1	1,539	869	2,408	
23	5/31–6/06	101	57	158	64.0	36.0	9,208	5,170	14,378	
24	6/07–6/13	201	109	310	64.3	35.7	6,390	3,542	9,932	
25	6/14–6/20	90	58	148	61.9	38.1	3,116	1,922	5,038	
26	6/21–6/27	104	54	158	63.5	36.5	3,405	1,959	5,364	
27	6/28–7/04	20	19	39	54.0	46.0	884	754	1,638	
28	7/05–7/11	0	0	0	51.3	48.7	943	896	1,839	
29	7/12–7/18	0	0	0	51.3	48.7	184	174	358	
30	7/19–7/25	0	0	0	51.3	48.7	27	26	53	
31	7/26–8/01	0	0	0	51.3	48.7	448	426	874	
32	8/02–8/08	0	0	0	51.3	48.7	948	901	1,849	
33	8/09–8/15	0	0	0	51.3	48.7	403	383	786	
34	8/16–8/22	0	0	0	51.3	48.7	2,369	2,251	4,620	
Total		516	297	813	60.8	39.2	29,901	19,292	49,193	

Table 10.—Estimated age composition of Karluk Lake early-run sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size	Age													Total	
		0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2	4.3		
21 5/17–5/23	0	Percent	0.0	0.0	6.3	3.5	5.6	43.7	7.0	6.3	17.6	9.2	0.0	0.7	0.0	100.0
		Numbers	0	0	0	0	0	1	0	0	1	0	0	0	0	3
22 5/24–5/30	142	Percent	0.0	0.0	6.3	3.8	5.5	43.6	7.0	6.3	17.6	9.2	0.0	0.7	0.0	100.0
		Numbers	0	0	55	34	49	386	62	56	156	81	0	6	0	886
23 5/31–6/06	207	Percent	0.0	0.1	4.8	8.4	4.4	39.4	7.3	5.5	20.2	9.3	0.0	0.4	0.0	100.0
		Numbers	0	20	567	978	608	4,488	886	625	2,557	1,121	0	34	0	11,884
24 6/07–6/13	245	Percent	0.0	0.4	4.8	5.0	11.6	31.6	7.8	5.3	23.4	9.9	0.1	0.0	0.1	100.0
		Numbers	0	117	1,311	1,356	3,546	8,734	2,209	1,552	6,386	2,770	42	4	42	28,069
25 6/14–6/20	208	Percent	0.0	0.4	3.5	2.7	21.8	25.8	8.3	8.0	17.7	10.8	0.4	0.0	0.4	100.0
		Numbers	0	92	790	617	4,730	5,711	1,833	1,758	3,939	2,385	92	10	82	22,039
26 6/21–6/27	243	Percent	0.0	0.1	3.3	2.5	24.2	20.3	9.5	12.1	12.0	15.1	0.4	0.3	0.1	100.0
		Numbers	0	8	336	251	2,452	1,975	973	1,265	1,141	1,581	39	35	4	10,059
27 6/28–7/04	210	Percent	0.1	0.5	3.4	3.0	28.2	26.7	8.7	8.4	10.4	10.5	0.1	0.1	0.0	100.0
		Numbers	4	43	274	239	2,268	2,187	695	647	838	818	3	3	0	8,020
28 7/05–7/11	215	Percent	0.3	1.2	1.6	3.7	40.0	24.0	5.5	9.5	4.9	9.2	0.0	0.0	0.0	100.0
		Numbers	12	41	63	135	1,403	886	217	334	201	338	0	0	0	3,630
29 7/12–7/18	172	Percent	0.0	0.5	3.0	2.3	39.2	24.3	6.3	10.4	4.7	9.1	0.0	0.2	0.0	100.0
		Numbers	2	16	66	52	901	568	114	225	110	200	0	1	0	2,254
30 7/19–7/25	75	Percent	0.0	0.0	1.0	1.9	18.2	11.0	6.9	6.3	2.2	5.3	0.0	0.6	0.0	53.4
		Numbers	0	0	4	7	71	42	26	24	8	20	0	2	0	205
Total	1,717	Percent	0.0	0.4	4.0	4.2	18.4	28.7	8.1	7.5	17.6	10.7	0.2	0.1	0.1	100.0
		Numbers	18	338	3,466	3,669	16,028	24,978	7,013	6,486	15,337	9,316	176	95	128	87,049

Note: Karluk early-run escapement is summed through 21 July; however, samples from all of week 30 were utilized in the age composition estimates.

Table 11.—Length composition of Karluk Lake early-run sockeye salmon escapement samples by age and sex, 2011.

	Age														
	0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2	4.3	Total	
Females															
Mean Length (mm)	569	—	473	543	—	502	548	—	503	544	—	490	—	514	
SE	—	—	7	5	—	2	4	—	3	3	—	25	—	4	
Range	—	—	395–571	480–586	—	402–583	426–608	—	432–557	473–600	—	465–514	—	395–608	
Sample Size	1	0	30	26	0	242	59	0	112	92	0	2	0	564	
Males															
Mean Length (mm)	—	322	476	550	361	509	560	368	504	558	397	535	556	448	
SE	—	7	7	5	1	3	4	2	4	4	10	—	—	3	
Range	—	295–345	390–548	487–602	300–533	374–655	446–622	308–465	370–593	464–620	387–406	—	—	295–655	
Sample Size	0	7	32	42	356	240	65	135	117	82	2	1	1	1,080	
All Fish															
31	Mean Length (mm)	569	322	475	547	361	506	554	368	503	551	397	505	556	471
	SE	—	7	5	4	1	2	3	2	2	2	10	21	—	2
	Range	—	295–345	390–571	480–602	300–533	374–655	426–622	308–465	370–593	464–620	387–406	465–535	—	295–655
	Sample Size	1	7	62	68	356	482	124	135	229	174	2	3	1	1,644

Table 12.—Estimated sex composition of Karluk Lake sockeye salmon escapement by week, 2011.

Statistical Week	Dates	Sample Size			Escapement			Number		
		Females	Males	Total	Percent	Females	Males	Females	Males	Total
21	5/17–5/23	0	0	0	37.3	62.7		1	2	3
22	5/24–5/30	60	101	161	36.8	63.2		326	560	886
23	5/31–6/06	67	178	245	32.9	67.1		3,913	7,971	11,884
24	6/07–6/13	111	163	274	38.0	62.0		10,670	17,399	28,069
25	6/14–6/20	81	158	239	34.7	65.3		7,652	14,387	22,039
26	6/21–6/27	92	176	268	35.0	65.0		3,520	6,539	10,059
27	6/28–7/04	103	137	240	40.6	59.4		3,256	4,764	8,020
28	7/05–7/11	72	167	239	33.2	66.8		1,205	2,425	3,630
29	7/12–7/18	65	130	195	32.9	67.1		741	1,513	2,254
30	7/19–7/25	32	52	84	20.4	33.0		78	127	205
Early Run Total		683	1,262	1,945	36.0	64.0		31,362	55,687	87,049
30	7/19–7/25	32	52	84	17.8	28.8		68	111	179
31	7/26–8/01	102	98	200	47.9	52.1		812	883	1,695
32	8/02–8/08	30	61	91	35.6	64.4		269	487	756
33	8/09–8/15	92	88	180	47.0	53.0		309	349	658
34	8/16–8/22	84	151	235	39.2	60.8		1,291	2,001	3,292
35	8/23–8/29	93	147	240	38.1	61.9		27,587	44,750	72,337
36	8/30–9/05	47	73	120	39.2	60.8		2,504	3,882	6,386
37	9/06–9/12	175	183	358	45.4	54.6		40,203	48,442	88,645
38	9/13–9/19	14	39	53	26.5	73.5		9,022	25,056	34,078
39	9/21–9/26	0	0	0	26.4	73.6		5,877	16,370	22,247
Late Run Total		669	892	1,561	38.2	61.8		87,941	142,332	230,273

Note: Karluk early-run escapement is summed through 21 July and late-run escapement after 21 July; however, samples from all of week 30 were utilized for both early- and late-run sex composition estimates.

Table 13.—Estimated age composition of Karluk Lake late-run sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size	Age													Total
		0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.2	4.3		
30 7/19–7/25	75	Percent Numbers	0.0 0	0.0 0	0.8 3	1.7 6	15.9 62	9.6 36	6.0 22	5.5 21	1.9 7	4.7 18	0.5 2	0.0 0	46.6 179
31 7/26–8/01	169	Percent Numbers	0.0 0	0.0 0	1.6 33	3.6 61	13.0 218	46.4 780	14.1 226	2.8 50	11.4 204	6.6 115	0.4 8	0.0 0	100.0 1,695
32 8/02–8/08	79	Percent Numbers	0.1 0	0.0 0	0.7 3	3.2 27	7.9 68	53.9 404	16.4 128	0.3 3	12.5 83	4.9 39	0.0 0	0.0 0	100.0 756
33 8/09–8/15	146	Percent Numbers	0.5 3	0.0 0	2.7 17	1.3 9	4.5 31	53.1 350	12.6 85	1.1 7	19.8 127	4.3 28	0.0 0	0.0 0	100.0 658
34 8/16–8/22	172	Percent Numbers	0.5 20	0.0 0	2.5 85	0.5 20	3.7 115	52.8 1,740	5.5 204	1.7 55	28.8 921	3.9 134	0.0 0	0.0 0	100.0 3,292
35 8/23–8/29	170	Percent Numbers	0.1 86	0.0 0	2.3 1,698	0.2 88	4.7 3,559	53.0 37,962	2.5 1,706	1.7 1,273	32.7 24,009	2.7 1,956	0.1 1	0.0 0	100.0 72,337
36 8/30–9/05	98	Percent Numbers	0.0 0	0.0 0	2.1 132	1.5 111	2.3 107	59.6 3,886	4.2 295	1.3 73	25.5 1,537	2.9 189	0.7 55	0.0 0	100.0 6,386
37 9/06–9/12	296	Percent Numbers	0.6 240	0.0 0	0.6 784	0.8 981	6.8 4,104	54.3 54,122	6.3 3,938	4.1 2,087	22.5 19,312	3.0 2,698	0.6 336	0.4 43	100.0 88,645
38 9/13–9/19	35	Percent Numbers	2.7 971	0.0 0	0.0 0	0.0 1	16.4 5,832	12.4 2,968	18.8 6,801	13.5 4,858	28.1 9,730	2.9 974	2.7 971	2.7 971	100.0 34,078
39 9/20–9/26	0	Percent Numbers	2.9 636	0.0 0	0.0 0	0.0 0	17.1 3,814	8.6 1,907	20.0 4,449	14.3 3,178	28.6 6,356	2.9 636	2.9 636	2.9 636	100.0 22,247
Total	1,240	Percent Numbers	0.8 1,957	0.0 0	1.2 2,755	0.6 1,304	7.8 17,910	45.2 104,155	7.8 17,855	5.0 11,606	27.0 62,285	2.9 6,788	0.9 2,010	0.7 1,650	100.0 230,273

Note: Samples were collected using a beach seine in the lagoon in late August and September. Karluk late-run escapement is summed after 21 July; however, samples from all of week 30 were utilized in the age composition estimates.

Table 14.—Length composition of Karluk Lake late-run sockeye salmon escapement samples by age and sex, 2011.

	Age											
	0.3	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.2	4.3	Total
Females												
Mean Length (mm)	577	511	527	—	517	534	—	527	532	—	—	522
SE	1	12	7	—	2	5	—	2	6	—	—	3
Range	575–579	410–566	492–560	—	407–590	445–590	—	444–590	455–586	—	—	407–590
Sample Size	3	14	9	0	305	48	0	133	26	0	0	538
Males												
Mean Length (mm)	588	518	569	379	542	569	382	549	568	508	507	515
SE	—	16	9	3	2	5	7	3	5	36	—	3
Range	—	436–575	521–592	276–455	420–604	495–624	240–465	438–612	515–609	402–561	—	240–624
Sample Size	1	7	9	99	325	48	36	134	27	4	1	691
All Fish												
Mean Length (mm)	580	513	548	379	530	551	382	538	550	508	507	518
SE	3	9	7	3	1	4	7	2	5	36	—	2
Range	575–588	410–575	492–592	276–455	407–604	445–624	240–465	438–612	455–609	402–561	—	240–624
Sample Size	4	21	18	99	630	96	36	267	53	4	1	1,229

Table 15.—Estimated age composition of Ayakulik River (Red Lake) early-run sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size		Age										Total
			0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	
21 5/17–5/23	0	Percent Numbers	0.0 0	0.0 0	27.0 0	29.7 0	0.0 0	0.0 0	37.8 0	5.4 0	0.0 0	0.0 0	100.0 0
22 5/24–5/30	37	Percent Numbers	0.1 1	0.0 0	27.0 211	30.2 238	0.0 0	0.0 0	37.3 289	5.4 42	0.0 0	0.0 0	100.0 781
23 5/31–6/6	207	Percent Numbers	1.6 143	0.1 3	25.2 2,028	40.2 3,205	0.0 0	0.0 0	26.5 2,035	6.4 480	0.0 0	0.1 3	100.0 7,897
24 6/7–6/13	214	Percent Numbers	0.8 355	0.4 299	22.3 14,202	41.0 27,469	0.0 0	0.0 0	26.7 18,071	8.5 6,143	0.0 0	0.4 299	100.0 66,838
25 6/14–6/20	207	Percent Numbers	0.4 99	4.0 1,278	38.6 11,332	21.3 6,557	0.0 0	8.2 2,475	21.3 6,108	6.1 1,797	0.0 0	0.1 26	100.0 29,672
26 6/21–6/27	220	Percent Numbers	0.1 28	10.7 2,488	43.4 10,189	14.9 3,492	0.0 0	16.0 3,722	11.4 2,640	3.4 803	0.0 0	0.0 0	100.0 23,361
27 6/28–7/4	228	Percent Numbers	0.4 156	14.4 5,263	34.5 12,338	12.7 4,594	0.1 37	21.0 7,698	13.6 4,997	3.2 1,157	0.0 0	0.0 0	100.0 36,239
28 7/5–7/11	219	Percent Numbers	0.5 26	11.7 681	24.8 1,428	14.5 829	0.4 24	25.4 1,464	18.4 1,062	4.1 232	0.1 7	0.0 0	100.0 5,754
29 7/12–7/18	216	Percent Numbers	0.1 20	2.2 735	3.9 1,458	2.7 998	0.1 20	4.9 1,620	4.8 1,854	0.5 214	0.1 19	0.0 0	19.3 6,938
Total	1,548	Percent Numbers	0.5 828	6.1 10,747	30.0 53,186	26.7 47,381	0.0 81	9.6 16,979	20.9 37,056	6.1 10,869	0.0 26	0.2 327	100.0 177,480

Note: Ayakulik early-run escapement is summed through 15 July; however, samples from all of week 29 were utilized in the age composition estimates.

Table 16.—Length composition of Ayakulik River (Red Lake) early-run sockeye salmon escapement samples by age and sex, 2011.

	Age										Total
	0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	
Females											
Mean Length (mm)	—	—	497	552	539	—	514	554	—	522	523
SE	—	—	2	2	—	—	2	3	—	—	4
Range	—	—	302–564	479–602	—	—	384–577	486–592	—	—	302–602
Sample Size	0	0	238	210	1	0	164	43	0	1	657
Males											
Mean Length (mm)	576	332	510	564	525	367	532	559	352	—	466
SE	8	1	2	2	—	1	3	6	—	—	3
Range	530–613	304–361	326–587	508–620	—	300–455	420–611	455–615	—	—	300–620
Sample Size	9	112	223	129	1	204	139	32	1	0	850
All Fish											
Mean Length (mm)	576	332	503	556	532	367	522	556	352	522	491
SE	8	1	1	1	7	1	2	3	—	—	2
Range	530–613	304–361	302–587	479–620	525–539	300–455	384–611	455–615	—	—	300–620
Sample Size	9	112	461	339	2	204	303	75	1	1	1,507

Table 17.—Estimated sex composition of Ayakulik River (Red Lake) sockeye salmon escapement by week, 2011.

Statistical Week	Dates	Sample Size			Escapement					
		Females	Males	Total	Percent	Females	Males	Females	Males	Total
22	5/24–5/30	14	26	40	36.0	64.0	281	500	781	
23	5/31–6/06	112	109	221	51.4	48.6	4,060	3,837	7,897	
24	6/07–6/13	145	95	240	60.0	40.0	40,098	26,740	66,838	
25	6/14–6/20	143	105	248	54.7	45.3	16,227	13,445	29,672	
26	6/21–6/27	111	130	241	44.8	55.2	10,454	12,907	23,361	
27	6/28–7/04	101	152	253	39.6	60.4	14,364	21,875	36,239	
28	7/05–7/11	92	151	243	34.6	65.4	1,992	3,762	5,754	
29	7/12–7/18	59	180	239	5.4	13.9	1,938	5,000	6,938	
Early Run Total		777	948	1,725	50.4	49.6	89,414	88,066	177,480	
29	7/12–7/18	59	180	239	22.6	58.2	8,124	20,955	29,079	
30	7/19–7/25	35	72	107	34.8	65.2	2,342	4,379	6,721	
31	7/26–8/01	49	64	113	43.3	56.7	9,348	12,247	21,595	
32	8/02–8/08	10	13	23	43.5	56.5	7,996	10,392	18,388	
33	8/09–8/15	27	35	62	41.4	58.6	1,151	1,628	2,779	
34	8/16–8/22	46	105	151	29.9	70.1	1,009	2,359	3,368	
35	8/23–8/29	6	15	21	51.0	49.0	439	422	861	
36	8/30–9/5	2	0	2	100.0	0.0	543	0	543	
37	9/6–9/12	0	0	0	100.0	0.0	327	0	327	
Late Run Total		234	484	718	37.4	62.6	31,279	52,382	83,661	

Note: Ayakulik early-run escapement is summed through 15 July and late-run escapement after 15 July; however, samples from all of week 29 were utilized for both early- and late-run sex composition estimates.

Table 18.—Estimated age composition of Ayakulik River (Red Lake) late-run sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size		Age											Total	
			0.1	0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	
29 7/12–7/18	216	Percent	0.0	0.3	9.1	16.4	11.4	0.3	20.5	20.3	2.2	0.0	0.3	0.0	80.7
		Numbers	0	82	3,082	6,111	4,182	82	6,788	7,772	898	0	81	0	29,079
30 7/19–7/25	101	Percent	0.0	0.0	6.7	23.2	14.5	0.0	13.1	37.7	4.6	0.1	0.0	0.0	100.0
		Numbers	0	0	413	1,544	951	0	802	2,682	316	13	0	0	6,721
31 7/26–8/1	104	Percent	0.0	0.0	4.3	19.1	9.2	0.0	9.3	53.6	3.8	0.7	0.0	0.0	100.0
		Numbers	0	0	808	3,887	1,608	0	1,853	12,520	736	182	0	0	21,595
32 8/2–8/8	20	Percent	0.0	0.0	8.1	26.4	7.3	0.0	19.1	37.6	1.1	0.0	0.0	0.5	100.0
		Numbers	0	0	1,741	5,331	1,034	0	2,965	7,235	54	0	0	27	18,388
33 8/9–8/15	56	Percent	0.0	0.0	3.6	19.0	11.3	0.0	27.0	34.0	3.8	0.0	0.0	1.3	100.0
		Numbers	0	0	103	529	314	0	748	944	105	0	0	37	2,779
34 8/16–8/22	131	Percent	1.4	0.0	0.7	16.7	11.3	0.0	21.3	36.5	12.1	0.0	0.0	0.1	100.0
		Numbers	64	0	18	545	402	0	655	1,205	477	0	0	0	3,368
35 8/23–8/29	17	Percent	4.1	0.0	0.1	9.9	13.1	0.0	6.5	45.4	21.0	0.0	0.0	0.0	100.0
		Numbers	31	0	1	74	99	0	48	449	159	0	0	0	861
36 8/30–9/5	2	Percent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
		Numbers	0	0	0	0	0	0	0	543	0	0	0	0	543
37 9/6–9/12	0	Percent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
		Numbers	0	0	0	0	0	0	0	327	0	0	0	0	327
Total	647	Percent	0.1	0.1	7.4	21.5	10.3	0.1	16.6	40.3	3.3	0.2	0.1	0.1	100.0
		Numbers	95	83	6,165	18,021	8,589	83	13,860	33,677	2,746	195	81	65	83,661

Note: Ayakulik late-run escapement is summed after 15 July; however, samples from all of week 29 were utilized in the age composition estimates.

Table 19.—Length composition of Ayakulik River (Red Lake) late-run sockeye salmon escapement samples by age and sex, 2011.

	Age									
	0.1	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.2	Total
Females										
Mean Length (mm)	—	—	508	553	—	529	540	—	510	528
SE	—	—	4	4	—	2	9	—	—	7
Range	—	—	439–562	513–604	—	464–571	484–584	—	—	439–604
Sample Size	0	0	46	29	0	74	11	0	1	161
Males										
Mean Length (mm)	298	334	542	579	397	556	596	496	—	501
SE	—	3	4	6	4	2	5	—	—	5
Range	—	311–357	461–585	525–628	340–498	457–610	555–621	—	—	298–628
Sample Size	1	18	49	25	83	118	15	1	0	310
All Fish										
Mean Length (mm)	298	334	526	565	397	546	572	496	510	510
SE	—	3	3	4	4	2	7	—	—	3
Range	—	311–357	439–585	513–628	340–498	457–610	484–621	—	—	298–628
Sample Size	1	18	95	54	83	192	26	1	1	471

Table 20.—Estimated age composition of South Olga Lakes (Upper Station) early-run sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size		Age											Total
			0.1	0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	
21 5/17–5/23	0	Percent	0.0	0.0	0.0	16.7	3.3	0.0	60.0	20.0	0.0	0.0	0.0	100.0
		Numbers	0	0	0	25	5	0	89	30	0	0	0	148
22 5/24–5/30	0	Percent	0.0	0.0	0.0	16.7	3.3	0.0	60.0	20.0	0.0	0.0	0.0	100.0
		Numbers	0	0	0	335	67	0	1,206	402	0	0	0	2,010
23 5/31–6/06	30	Percent	0.0	0.0	0.0	16.7	3.3	0.0	60.0	20.0	0.0	0.0	0.0	100.0
		Numbers	0	0	0	1,294	259	0	4,657	1,552	0	0	0	7,761
24 6/07–6/13	258	Percent	0.0	0.0	0.7	6.6	7.0	5.8	57.5	22.3	0.0	0.1	0.0	100.0
		Numbers	0	0	54	542	610	453	4,932	1,919	0	8	0	8,517
25 6/14–6/20	139	Percent	0.0	0.0	4.2	6.0	5.6	25.3	42.5	15.7	0.0	0.5	0.0	100.0
		Numbers	0	0	132	203	195	813	1,473	549	0	18	0	3,384
26 6/21–6/27	91	Percent	0.0	0.1	12.1	4.4	2.5	47.5	24.9	8.3	0.0	0.2	0.0	100.0
		Numbers	0	1	505	236	148	2,056	1,298	411	0	13	0	4,667
27 6/28–7/04	186	Percent	0.0	0.4	10.2	2.1	1.4	51.2	20.3	13.9	0.2	0.4	0.0	100.0
		Numbers	0	7	174	36	22	857	357	240	3	7	0	1,704
28 7/05–7/11	94	Percent	0.0	0.0	8.4	1.6	2.5	60.4	13.5	12.9	0.8	0.0	0.0	100.0
		Numbers	0	0	15	2	4	106	22	23	1	0	0	174
29 7/12–7/18	215	Percent	0.0	0.0	3.7	2.2	3.0	23.5	17.8	6.3	0.0	0.0	0.0	56.5
		Numbers	0	0	25	16	22	157	130	43	0	0	0	394
Total	1,013	Percent	0.0	0.0	3.1	9.4	4.6	15.5	49.2	18.0	0.0	0.2	0.0	100.0
		Numbers	0	8	904	2,689	1,332	4,444	14,164	5,168	4	46	0	28,759

Note: Upper Station early-run escapement is summed through 15 July; however, samples from all of week 29 were utilized in the age composition estimates.

Table 21.—Length composition of South Olga Lakes (Upper Station) early-run sockeye salmon escapement samples by week, 2011.

	Age									
	0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	Total
Females										
Mean Length (mm)	—	—	505	544	—	508	540	—	479	520
SE	—	—	6	6	—	2	3	—	—	5
Range	—	—	451–549	454–579	—	446–589	476–602	—	—	446–602
Sample Size	0	0	22	23	0	200	99	0	1	345
Males										
Mean Length (mm)	566	329	514	555	354	513	550	339	526	415
SE	—	2	9	8	1	3	3	—	—	4
Range	—	283–381	399–586	486–611	305–408	410–610	451–601	—	—	283–611
Sample Size	1	63	19	18	342	143	58	1	1	646
All Fish										
Mean Length (mm)	566	329	509	549	354	510	544	339	503	451
SE	—	2	5	5	1	2	2	—	24	3
Range	—	283–381	399–586	454–611	305–408	410–610	451–602	—	479–526	283–611
Sample Size	1	63	41	41	342	343	157	1	2	991

Table 22.—Estimated sex composition of South Olga Lakes (Upper Station) sockeye salmon escapement by week, 2011.

Statistical Week	Dates	Sample Size			Escapement					
		Females	Males	Total	Percent Females	Males	Females	Males	Total	
21	5/17–5/23	0	0	0	55.0	45.0	81	67	148	
22	5/24–5/30	0	0	0	55.0	45.0	1,106	905	2,010	
23	5/31–6/06	22	18	40	55.0	45.0	4,269	3,492	7,761	
24	6/07–6/13	156	124	280	53.1	46.9	4,519	3,998	8,517	
25	6/14–6/20	59	109	168	40.0	60.0	1,354	2,030	3,384	
26	6/21–6/27	21	80	101	26.1	73.9	1,218	3,449	4,667	
27	6/28–7/04	51	152	203	23.8	76.2	406	1,298	1,704	
28	7/05–7/11	20	87	107	20.5	79.5	36	138	174	
29	7/12–7/18	72	169	241	19.2	37.3	134	260	394	
Early Run Total		401	739	1,140	45.6	54.4	13,122	15,637	28,759	
42										
29	7/12–7/18	72	169	241	14.8	28.7	103	200	303	
30	7/19–7/25	69	72	141	49.4	50.6	1,337	1,372	2,709	
31	7/26–8/01	76	70	146	50.5	49.5	1,184	1,162	2,346	
32	8/02–8/08	117	136	253	48.2	51.8	3,588	3,852	7,440	
33	8/09–8/15	135	136	271	50.0	50.0	17,722	17,688	35,410	
34	8/16–8/22	123	119	242	51.5	48.5	9,051	8,536	17,587	
35	8/23–8/29	153	106	259	58.0	42.0	11,144	8,060	19,204	
36	8/30–9/05	137	103	240	56.6	43.4	5,712	4,373	10,085	
37	9/06–9/12	94	84	178	53.5	46.5	3,424	2,974	6,398	
38	9/13–9/19	7	6	13	53.8	46.2	221	190	411	
Late Run Total		983	1,001	1,984	52.5	47.5	53,488	48,405	101,893	

Note: Upper Station early-run escapement is summed through 15 July and late-run escapement after 15 July; however, samples from all of week 29 were utilized for both early- and late-run sex composition estimates.

Table 23.—Estimated age composition of South Olga Lakes (Upper Station) late-run sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size		Age											Total	
			0.1	0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3		
29 7/12–7/18	215	Percent	0.0	0.0	2.8	1.7	2.3	18.0	13.7	4.9	0.0	0.0	0.0	43.5	
		Numbers	0	0	19	13	17	121	100	33	0	0	0	303	
30 7/19–7/25	122	Percent	0.1	0.0	2.5	7.9	9.2	15.1	59.9	5.3	0.0	0.0	0.0	100.0	
		Numbers	3	0	60	218	263	347	1,683	135	0	0	0	2,709	
31 7/26–8/01	129	Percent	0.6	0.2	1.0	12.2	5.0	17.3	62.2	1.3	0.0	0.1	0.0	100.0	
		Numbers	15	10	23	323	97	390	1,463	18	0	6	0	2,346	
32 8/02–8/08	228	Percent	0.5	1.0	1.6	16.6	2.8	11.3	64.6	0.9	0.0	0.7	0.1	100.0	
		Numbers	38	70	98	1,234	228	945	4,727	51	0	46	2	7,440	
33 8/09–8/15	239	Percent	0.4	0.1	2.4	9.7	2.4	10.3	71.1	2.8	0.0	0.6	0.3	100.0	
		Numbers	121	19	853	3,155	816	3,663	25,398	1,049	0	221	115	35,410	
34 8/16–8/22	219	Percent	0.2	0.0	0.8	6.1	1.4	11.7	72.9	4.0	0.2	2.7	0.0	100.0	
		Numbers	24	0	153	1,082	267	2,139	12,782	656	14	461	10	17,587	
35 8/23–8/29	234	Percent	0.6	0.1	1.1	6.3	1.2	6.9	75.1	5.8	0.6	2.2	0.0	100.0	
		Numbers	120	17	204	1,223	235	1,351	14,406	1,105	120	424	0	19,204	
36 8/30–9/05	215	Percent	0.1	0.3	0.7	3.2	1.1	6.0	76.4	8.5	0.1	3.6	0.0	100.0	
		Numbers	7	37	64	340	110	582	7,759	818	7	361	0	10,085	
37 9/06–9/12	158	Percent	0.0	0.0	7.2	1.4	1.3	9.3	65.7	9.1	0.0	5.9	0.0	100.0	
		Numbers	0	3	373	104	87	572	4,292	619	0	346	0	6,398	
38 9/13–9/19	9	Percent	0.0	0.0	22.2	0.0	0.0	11.1	55.6	0.0	0.0	11.1	0.0	100.0	
		Numbers	0	0	91	0	0	46	228	0	0	46	0	411	
Total		Percent	0.3	0.2	1.9	7.5	2.1	10.0	71.5	4.4	0.1	1.9	0.1	100.0	
		Numbers	328	155	1,938	7,693	2,120	10,156	72,839	4,484	141	1,912	127	101,893	

Note: Upper Station late-run escapement is summed after 15 July; however, samples from all of week 29 were utilized in the age composition estimates.

Table 24.—Length composition of South Olga Lakes (Upper Station) late-run sockeye salmon escapement samples by week, 2011.

	Age											
	0.1	0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	Total
Females												
Mean Length (mm)	—	563	—	494	557	—	536	566	—	539	—	535
SE	—	11	—	3	3	—	1	4	—	4	—	3
Range	—	552–573	—	432–562	520–598	—	450–598	503–613	—	512–559	—	432–613
Sample Size	0	2	0	75	30	0	646	52	0	13	0	818
Males												
Mean Length (mm)	320	599	335	494	574	379	558	584	392	565	603	508
SE	8	17	5	7	8	2	2	8	—	7	—	3
Range	290–332	582–615	306–398	363–600	525–625	316–443	423–632	493–635	—	518–618	—	290–635
Sample Size	5	2	23	54	15	161	451	24	1	15	1	752
All Fish												
Mean Length (mm)	320	581	335	494	563	379	545	572	392	553	603	522
SE	8	13	5	3	3	2	1	4	—	5	—	2
Range	290–332	552–615	306–398	363–600	520–625	316–443	423–632	493–635	—	512–618	—	290–635
Sample Size	5	4	23	129	45	161	1,097	76	1	28	1	1,570

†

Table 25.—Estimated age composition of Frazer Lake sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size	Age													Total
		0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	4.1		
24 6/7–6/13	0	Percent	0.0	0.0	5.4	2.7	0.0	35.1	51.4	5.4	0.0	0.0	0.0	0.0	100.0
		Numbers	0	0	0	0	0	0	1	0	0	0	0	0	1
25 6/14–6/20	37	Percent	0.0	0.0	5.4	2.7	0.0	35.1	51.4	5.4	0.0	0.0	0.0	0.0	100.0
		Numbers	0	0	6	3	0	37	53	6	0	0	0	0	104
26 6/21–6/27	140	Percent	0.0	0.9	5.3	2.6	0.5	24.6	54.5	9.4	0.4	1.6	0.1	0.0	100.0
		Numbers	0	19	115	56	12	508	1,172	208	10	36	3	0	2,140
27 6/28–7/04	244	Percent	0.0	2.6	2.3	1.8	0.3	30.9	48.4	9.1	0.0	3.9	0.7	0.0	100.0
		Numbers	0	817	627	553	101	9,680	15,013	2,842	0	1,240	222	0	31,095
28 7/05–7/11	306	Percent	0.0	2.9	4.3	2.2	0.0	32.5	47.7	6.6	0.0	3.4	0.4	0.0	100.0
		Numbers	0	887	1,303	651	11	9,697	14,185	1,978	0	1,011	126	0	29,848
29 7/12–7/18	114	Percent	0.0	1.4	3.0	1.8	0.0	32.8	53.9	4.7	0.0	1.6	0.8	0.0	100.0
		Numbers	0	458	942	557	0	9,698	15,872	1,450	0	500	227	0	29,703
30 7/19–7/25	207	Percent	0.0	2.2	1.8	1.1	0.0	39.7	46.6	3.0	0.0	4.3	1.3	0.0	100.0
		Numbers	0	460	434	313	0	7,675	10,813	750	0	741	287	0	21,472
31 7/26–8/01	204	Percent	0.0	2.1	1.3	0.3	0.0	56.7	30.5	2.0	0.0	6.4	0.7	0.0	100.0
		Numbers	0	51	30	6	0	1,409	778	48	0	162	19	0	2,504
32 8/02–8/08	218	Percent	0.0	3.4	1.6	0.7	0.0	64.8	18.6	3.3	0.0	7.4	0.3	0.0	100.0
		Numbers	0	61	36	16	0	1,373	416	68	0	138	3	0	2,111
33 8/09–8/15	217	Percent	0.0	5.9	1.0	0.0	0.0	61.0	16.1	3.0	0.0	11.6	1.2	0.2	100.0
		Numbers	0	138	24	2	0	1,442	388	70	0	270	28	5	2,367
34 8/16–8/22	199	Percent	0.0	4.7	0.8	0.0	0.0	51.5	28.3	1.0	0.0	10.5	2.6	0.7	100.0
		Numbers	0	347	61	0	0	3,778	2,135	63	0	766	192	59	7,401
35 8/23–8/29	212	Percent	0.2	2.8	0.2	0.2	0.0	51.7	29.6	2.0	0.0	10.7	2.6	0.1	100.0
		Numbers	4	58	4	4	0	1,137	653	45	0	235	56	0	2,197
36 8/30–9/5	153	Percent	0.6	2.0	0.6	0.6	0.0	50.4	33.2	2.6	0.0	9.2	0.7	0.0	100.0
		Numbers	19	63	19	19	0	1,573	1,026	80	0	290	27	0	3,115
37 9/06–9/12	0	Percent	0.7	2.0	0.7	0.7	0.0	50.3	33.3	2.6	0.0	9.2	0.7	0.0	100.0
		Numbers	4	11	4	4	0	294	195	15	0	53	4	0	584
Total	2,251	Percent	0.0	2.5	2.7	1.6	0.1	35.9	46.6	5.7	0.0	4.0	0.9	0.0	100.0
		Numbers	27	3,371	3,604	2,183	123	48,300	62,700	7,623	11	5,442	1,194	65	134,642

Table 26.—Length composition of Frazer Lake sockeye salmon escapement samples by age and sex, 2011.

	Age												
	0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	4.1	Total
Females													
Mean Length (mm)	579	—	496	562	573	—	502	553	575	—	497	—	508
SE	—	—	5	10	10	—	1	4	—	—	5	—	3
Range	—	—	447–549	480–610	563–583	—	420–595	465–610	—	—	450–550	—	420–610
Sample Size	1	0	25	15	2	0	566	70	1	0	22	0	702
Males													
Mean Length (mm)	—	327	505	587	—	342	507	579	—	349	514	378	380
SE	—	2	13	9	—	1	3	6	—	2	25	28	2
Range	—	278–382	321–570	539–610	—	278–450	302–598	520–650	—	305–405	489–538	350–405	278–650
Sample Size	0	65	22	8	0	1,001	271	30	0	142	2	2	1,543
All Fish													
Mean Length (mm)	579	327	500	571	573	342	503	561	575	349	498	378	420
SE	—	2	6	7	10	1	1	3	—	2	5	28	2
Range	—	278–382	321–570	480–610	563–583	278–450	302–598	465–650	—	305–405	450–550	350–405	278–650
Sample Size	1	65	47	23	2	1,001	837	100	1	142	24	2	2,245

Table 27.—Estimated sex composition of Frazer Lake sockeye salmon escapement by week, 2011.

Statistical Week	Dates	Sample Size			Percent			Escapement		
		Females	Males	Total	Females	Males	Females	Males	Total	
24	6/7–6/13	0	0	0	35.0	65.0	0	1	1	
25	6/14–6/20	14	26	40	35.0	65.0	36	68	104	
26	6/21–6/27	58	102	160	36.0	64.0	771	1,369	2,140	
27	6/28–7/04	101	179	280	36.4	63.6	11,311	19,784	31,095	
28	7/05–7/11	135	225	360	37.8	62.2	11,295	18,553	29,848	
29	7/12–7/18	51	69	120	41.2	58.8	12,252	17,451	29,703	
30	7/19–7/25	102	138	240	42.0	58.0	9,020	12,452	21,472	
31	7/26–8/01	64	176	240	24.6	75.4	615	1,889	2,504	
32	8/02–8/08	42	198	240	17.3	82.7	366	1,745	2,111	
33	8/09–8/15	36	204	240	18.4	81.6	435	1,932	2,367	
34	8/16–8/22	72	168	240	29.3	70.7	2,169	5,232	7,401	
35	8/23–8/29	69	171	240	31.7	68.3	696	1,501	2,197	
36	8/30–9/5	94	146	240	38.4	61.6	1,195	1,920	3,115	
37	9/6–9/12	0	0	0	39.2	60.8	229	355	584	
Total		838	1,802	2,640	37.4	62.6	50,389	84,253	134,642	

Table 28.—Estimated age composition of Saltery Lake sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size		Age									Total
			0.2	0.3	1.2	1.3	1.4	2.1	2.2	2.3	2.4	
25 6/14–6/20	0	Percent	0.7	0.7	11.7	51.8	0.0	0.0	10.9	23.4	0.7	100.0
		Numbers	1	1	15	66	0	0	14	30	1	128
26 6/21–6/27	0	Percent	0.7	0.7	11.7	51.8	0.0	0.0	10.9	23.4	0.7	100.0
		Numbers	11	11	175	775	0	0	164	349	11	1,496
27 6/28–7/04	137	Percent	0.7	0.7	11.3	52.4	0.0	0.0	11.1	23.1	0.7	100.0
		Numbers	19	19	323	1,505	0	0	320	662	19	2,868
28 7/05–7/11	30	Percent	0.1	0.1	7.9	57.6	0.0	0.0	13.5	20.6	0.1	100.0
		Numbers	9	9	334	2,241	0	0	502	833	9	3,938
29 7/12–7/18	134	Percent	0.0	0.0	9.0	50.9	0.0	0.7	20.0	19.4	0.0	100.0
		Numbers	0	0	546	3,083	0	27	1,111	1,187	0	5,955
30 7/19–7/25	101	Percent	0.0	0.0	7.5	43.1	0.2	2.5	31.5	15.2	0.0	100.0
		Numbers	0	0	382	2,153	16	130	1,676	758	0	5,114
31 7/26–8/01	67	Percent	0.0	0.0	10.2	34.4	1.7	1.3	40.4	12.1	0.0	100.0
		Numbers	0	0	733	2,563	122	101	2,981	918	0	7,417
32 8/02–8/08	32	Percent	0.0	0.0	15.2	31.4	3.0	0.1	43.5	6.7	0.0	100.0
		Numbers	0	0	440	921	87	4	1,270	201	0	2,922
33 8/09–8/15	0	Percent	0.0	0.0	15.6	31.3	3.1	0.0	43.8	6.3	0.0	100.0
		Numbers	0	0	145	291	29	0	407	58	0	930
Total	501	Percent	0.1	0.1	10.1	44.2	0.8	0.9	27.4	16.2	0.1	100.0
		Numbers	40	40	3,093	13,598	254	262	8,444	4,996	40	30,768

Table 29.—Length composition of Saltery Lake sockeye salmon escapement samples by age and sex, 2011.

	Age									
	0.2	0.3	1.2	1.3	1.4	2.1	2.2	2.3	2.4	Total
Females										
Mean Length (mm)	556	—	498	556	551	—	499	545	550	535
SE	—	—	4	2	—	—	3	3	—	3
Range	—	—	455–527	439–605	—	—	445–545	493–584	—	439–605
Sample Size	1	0	27	116	1	0	55	50	1	251
Males										
Mean Length (mm)	—	582	521	590	596	342	524	580	—	563
SE	—	—	7	2	—	6	4	4	—	3
Range	—	—	428–574	526–646	—	330–358	449–592	514–618	—	330–646
Sample Size	0	1	22	121	1	4	59	42	0	250
All Fish										
Mean Length (mm)	556	582	508	573	574	342	512	561	550	549
SE	—	—	4	2	23	6	3	3	—	2
Range	—	—	428–574	439–646	551–596	330–358	445–592	493–618	—	330–646
Sample Size	1	1	49	237	2	4	114	92	1	501

Table 30.—Estimated sex composition of Saltery Lake sockeye salmon escapement by week, 2011.

Statistical Week	Dates	Sample Size			Percent			Escapement		
		Females	Males	Total	Females	Males	Females	Males	Total	
25	6/14–6/20	0	0	0	55.0	45.0	70	58	128	
26	6/21–6/27	0	0	0	55.0	45.0	823	673	1,496	
27	6/28–7/04	88	72	160	54.2	45.8	1,554	1,314	2,868	
28	7/05–7/11	18	22	40	48.3	51.7	1,903	2,035	3,938	
29	7/12–7/18	74	86	160	47.0	53.0	2,801	3,154	5,955	
30	7/19–7/25	62	58	120	50.7	49.3	2,593	2,521	5,114	
31	7/26–8/01	38	42	80	47.5	52.5	3,526	3,891	7,417	
32	8/02–8/08	17	23	40	43.0	57.0	1,257	1,665	2,922	
33	8/09–8/15	0	0	0	42.5	57.5	395	535	930	
Total		297	303	600	48.5	51.5	14,923	15,845	30,768	

Table 31.—Estimated age composition of Pasagshak River sockeye salmon escapement by week, 2011.

Statistical Week	Sample Size		Age							Total
			0.2	0.3	1.2	1.3	2.1	2.2	2.3	
24 6/7–6/13	0	Percent	0.0	63.6	0.0	9.1	27.3	0.0	0.0	100.0
		Numbers	0	95	0	14	41	0	0	150
25 6/14–6/20	0	Percent	0.0	63.6	0.0	9.1	27.3	0.0	0.0	100.0
		Numbers	0	6	0	1	2	0	0	9
26 6/21–6/27	0	Percent	0.0	63.6	0.0	9.1	27.3	0.0	0.0	100.0
		Numbers	0	45	0	6	19	0	0	71
27 6/28–7/04	11	Percent	0.6	60.9	0.0	13.1	24.8	0.0	0.6	100.0
		Numbers	9	1,806	0	322	755	0	9	2,900
28 7/05–7/11	138	Percent	2.0	53.8	0.0	21.9	20.5	0.0	1.8	100.0
		Numbers	30	725	0	314	270	0	27	1,365
29 7/12–7/18	142	Percent	3.7	39.1	0.0	25.2	31.2	0.0	0.8	100.0
		Numbers	127	1,520	0	901	1,077	0	39	3,664
30 7/19–7/25	118	Percent	2.1	33.2	0.0	41.8	22.7	0.0	0.1	100.0
		Numbers	9	138	0	175	93	0	1	416
31 7/26–8/01	189	Percent	1.3	30.6	0.5	48.6	18.6	0.4	0.0	100.0
		Numbers	38	830	9	1,285	478	12	0	2,652
32 8/02–8/08	63	Percent	0.4	21.1	2.5	52.4	23.4	0.2	0.1	100.0
		Numbers	3	162	17	376	167	1	0	727
33 8/09–8/15	61	Percent	1.3	16.9	0.6	61.6	16.9	1.3	1.3	100.0
		Numbers	9	135	7	481	140	9	9	791
34 8/16–8/22	0	Percent	1.6	16.4	0.0	63.9	14.8	1.6	1.6	100.0
		Numbers	11	108	0	420	97	11	11	657
Total	722	Percent	1.8	41.6	0.2	32.0	23.4	0.3	0.7	100.0
		Numbers	236	5,570	33	4,294	3,140	34	95	13,402

Table 32.—Length composition of Pasagshak River sockeye salmon escapement samples by age and sex, 2011.

	Age							
	0.2	0.3	1.1	1.2	1.3	2.2	2.3	Total
Females								
Mean Length (mm)	492	558	—	513	554	513	590	536
SE	6	2	—	2	2	—	—	2
Range	451–528	492–602	—	424–560	445–600	—	—	424–602
Sample Size	11	125	0	172	89	1	1	399
Males								
Mean Length (mm)	575	590	352	540	589	423	581	570
SE	21	2	18	2	3	—	12	2
Range	524–615	545–636	334–369	438–587	490–641	—	548–603	334–641
Sample Size	4	131	2	111	70	1	4	323
All Fish								
Mean Length (mm)	514	574	352	524	570	468	583	551
SE	12	2	18	2	2	45	10	1
Range	451–615	492–636	334–369	424–587	445–641	423–513	548–603	334–641
Sample Size	15	256	2	283	159	2	5	722

Table 33.—Estimated sex composition of Pasagshak River sockeye salmon escapement by week, 2011.

Statistical Week	Dates	Sample Size			Escapement			Number		
		Females	Males	Total	Percent Females	Males	Females	Males	Total	
24	6/7–6/13	0	0	0	54.5	45.5	82	68	150	
25	6/14–6/20	0	0	0	54.5	45.5	5	4	9	
26	6/21–6/27	0	0	0	54.5	45.5	39	32	71	
27	6/28–7/04	6	5	11	55.0	45.0	1,595	1,305	2,900	
28	7/05–7/11	84	61	145	57.7	42.3	787	578	1,365	
29	7/12–7/18	84	63	147	56.6	43.4	2,075	1,589	3,664	
30	7/19–7/25	61	69	130	50.2	49.8	209	207	416	
31	7/26–8/01	110	88	198	55.6	44.4	1,474	1,178	2,652	
32	8/02–8/08	41	27	68	58.8	41.2	428	299	727	
33	8/09–8/15	32	33	65	52.3	47.7	413	378	791	
34	8/16–8/22	0	0	0	49.2	50.8	323	334	657	
Total		418	346	764	55.4	44.6	7,430	5,972	13,402	

Table 34.—Kodiak sockeye salmon escapement age-2+ average length (METF mm) by year, system 1985 to 2011.

Year	System									
	Karluk Early	Karluk Late	Ayakulik Early	Ayakulik Late	Upper Stn Early	Upper Stn Late	Frazer	Afognak	Saltery	Pasagshak
1985	518	538	517	539	530	529	502	467	501	—
1986	519	555	519	—	509	567	505	474	542	—
1987	517	531	518	530	529	567	505	485	499	—
1988	504	532	514	545	520	563	508	477	479	—
1989	510	530	538	543	515	551	506	483	528	—
1990	506	537	519	530	486	527	504	478	494	—
1991	507	522	520	545	498	535	506	460	—	—
1992	482	516	514	535	488	518	499	457	—	—
1993	505	521	540	560	505	541	497	480	517	—
1994	481	512	505	523	480	522	482	464	481	—
1995	503	537	530	542	509	543	513	485	514	—
1996	517	548	530	543	517	563	526	473	530	—
1997	504	504	507	498	510	530	512	466	—	—
1998	486	512	485	529	477	523	490	453	—	—
1999	509	528	533	537	517	539	515	492	—	—
2000	502	523	503	535	509	564	505	479	—	—
2001	518	535	510	524	505	558	521	473	521	—
2002	501	535	530	536	523	551	515	480	516	—
2003	511	534	519	539	501	544	501	487	507	—
2004	491	529	512	532	499	544	508	465	—	—
2005	487	508	493	509	488	529	486	473	—	—
2006	475	488	489	513	497	526	516	472	—	—
2007	491	500	518	518	505	546	494	498	—	—
2008	479	507	507	519	502	554	490	480	502	—
2009	500	514	513	509	520	559	527	495	511	—
2010	479	526	497	519	492	541	506	457	524	—
2011	506	530	522	546	510	545	503	490	512	468
1985–2010 Avg.	500	524	515	530	505	544	505	475	510	—

Table 35.—Kodiak sockeye salmon escapement age-2.3 average length (METF mm) by year, system 1985 to 2011.

Year	System									
	Karluk Early	Karluk Late	Ayakulik Early	Ayakulik Late	Upper Stn Early	Upper Stn Late	Frazer	Afognak	Saltery	Pasagshak
1985	555	580	551	580	556	585	538	526	555	—
1986	552	598	555	—	563	588	555	536	568	—
1987	562	576	562	581	567	584	572	551	575	—
1988	569	582	557	589	567	610	553	525	555	—
1989	562	578	564	575	561	572	565	502	564	—
1990	553	571	562	572	542	578	558	534	536	—
1991	549	555	556	580	545	541	574	523	—	—
1992	535	551	560	570	533	562	534	522	—	—
1993	539	556	570	612	539	573	543	531	576	—
1994	524	549	544	578	518	560	541	521	554	—
1995	541	551	561	574	546	551	549	533	557	—
1996	568	581	561	584	556	591	571	551	589	—
1997	563	556	548	539	551	539	569	533	—	—
1998	531	552	523	550	518	549	546	511	—	—
1999	538	542	551	578	537	555	548	533	—	—
2000	551	563	551	580	546	592	557	549	—	—
2001	560	574	552	564	557	591	568	563	581	—
2002	558	587	554	576	554	580	569	526	586	—
2003	547	567	569	583	534	565	561	536	556	—
2004	537	576	550	568	541	583	562	543	—	—
2005	532	541	527	524	539	565	545	532	—	—
2006	527	541	523	549	535	545	544	524	—	—
2007	541	549	540	548	546	549	554	558	—	—
2008	536	552	529	547	518	583	536	552	561	—
2009	543	543	545	539	550	576	563	545	571	—
2010	534	548	524	552	533	563	544	516	574	—
2011	554	551	556	572	544	572	561	541	561	583
1985–2010 Avg.	546	562	550	568	544	570	555	534	566	—

Table 36.—Age composition of Kitoi Bay hatchery chum salmon broodstock samples by week, 2011.

Statistical Week	Sample Size	Age			Total	
		0.2	0.3	0.4		
29 7/12–7/18	38	Percent	0.0	91.9	8.1	100.0
		Numbers	0	34	3	37
30 7/19–7/25	202	Percent	2.5	95.0	2.5	100.0
		Numbers	5	192	5	202
31 7/26–8/01	279	Percent	0.7	97.9	1.4	100.0
		Numbers	2	274	4	280
Total	519	Percent	1.3	96.3	2.3	100.0
		Numbers	7	500	12	519

Table 37.—Length composition of Kitoi Bay hatchery chum salmon broodstock samples by age and sex, 2011.

	Age			
	0.2	0.3	0.4	Total
Females				
Mean Length (mm)	524	544	553	544
SE	6	1	4	2
Range	509–542	499–614	542–569	499–614
Sample Size	5	246	6	257
Males				
Mean Length (mm)	509	555	548	555
SE	7	2	18	2
Range	502–515	483–633	469–601	469–633
Sample Size	2	254	6	262
All Fish				
Mean Length (mm)	519	550	550	549
SE	5	1	9	1
Range	502–542	483–633	469–601	469–633
Sample Size	7	500	12	519

Table 38.—Kodiak Management Area commercial salmon harvest by species and year, 1970 through 2011.

Year	Species ^a					Total
	Chinook	Sockeye	Coho	Pink	Chum	
1970	1,089	917,047	66,424	12,036,598	919,972	13,941,130
1971	920	478,479	22,844	4,334,492	1,541,444	6,378,183
1972	1,300	222,408	16,587	2,478,064	1,163,426	3,881,785
1973	800	167,341	3,573	511,708	317,921	1,001,343
1974	545	418,761	13,631	2,647,244	249,294	3,329,475
1975	101	136,418	23,659	2,942,801	84,431	3,187,410
1976	766	641,484	23,714	11,077,992	740,495	12,484,451
1977	585	623,468	27,920	6,252,405	1,072,313	7,976,691
1978	3,228	1,071,782	48,795	15,004,065	814,345	16,942,215
1979	1,907	630,756	140,629	11,285,809	358,336	12,417,437
1980	529	651,394	139,154	17,290,615	1,075,557	19,157,249
1981	1,418	1,288,980	121,544	10,336,829	1,345,328	13,094,099
1982	1,214	1,203,787	344,823	8,089,780	1,262,587	10,902,191
1983	3,839	1,231,989	157,612	4,603,371	1,085,165	7,081,976
1984	4,657	1,950,639	229,524	10,844,293	649,092	13,678,205
1985	4,970	1,842,731	284,166	7,334,825	430,757	9,897,449
1986	4,381	3,188,046	168,690	11,807,727	1,134,372	16,303,216
1987	4,613	1,794,773	192,540	5,075,101	682,023	7,749,050
1988	22,374	2,699,014	303,298	14,559,038	1,426,410	19,010,134
1989 ^b	106	1,289,511	2,599	183,235	19,972	1,495,423
1990	18,808	5,248,400	293,819	5,983,812	577,750	12,122,589
1991	22,234	5,704,100	324,860	16,642,841	1,029,071	23,723,106
1992	24,299	4,167,871	280,085	3,310,644	679,559	8,462,458
1993	41,029	4,378,886	313,467	34,019,420	588,331	39,341,133
1994	22,576	2,877,999	296,311	8,162,564	738,856	12,098,306
1995	18,704	4,488,502	307,795	42,849,309	1,522,810	49,187,120
1996	13,071	4,970,362	201,836	3,486,930	543,751	9,215,950
1997	18,735	2,506,427	381,099	11,035,134	520,331	14,461,726
1998	17,349	3,623,712	425,152	22,062,465	316,115	26,444,793
1999	18,299	4,653,057	296,979	11,898,382	913,867	17,780,584
2000	12,293	2,906,441	333,052	9,927,397	1,194,448	14,373,631
2001	23,843	2,659,637	409,193	19,567,163	1,053,763	23,713,599
2002	19,320	1,831,014	503,615	18,328,638	650,178	21,332,765
2003	18,603	4,053,847	351,767	14,067,235	1,151,885	19,643,337
2004	28,907	4,169,565	490,161	21,440,905	1,121,873	27,251,411
2005	14,465	3,052,048	396,841	30,143,647	477,435	34,084,436
2006	20,383	1,585,630	556,310	31,694,492	1,082,132	34,938,947
2007	17,248	2,014,141	356,583	24,811,459	728,920	27,928,351
2008	17,252	1,821,629	301,460	8,788,476	908,030	11,836,847
2009	7,268	1,727,776	291,470	27,649,826	955,814	30,632,154
2010	14,710	1,439,535	269,407	8,871,063	734,901	11,329,616
2011	18,615	2,269,302	190,483	16,648,792	824,562	19,951,754
Average						
2006–2010	15,372	1,717,742	355,046	20,363,063	881,959	23,333,183
2001–2010	18,200	2,435,482	392,681	20,536,290	886,493	24,269,146

^a Catch numbers include personal use with commercial gear and ADF&G test fisheries.

^b Actual harvest numbers for 1989 are shown above. For the projected harvest if the *Exxon Valdez* oil spill had not eliminated a major portion of the commercial fishery consult Barrett et al. 1990.

Table 39.—Commercial salmon catch numbers by species, district, and section, Kodiak Management Area, 2011.

District	Section	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Afognak District											
S.W.AFOGNAK & RASPBERRY STRAITS SECTIONS											
(251-10,11,12,20)	437	3,923	17,014	89,102	3,365	19,604	48,277	153,632	10,297	67,125	0
Personal use of commercial catch	7	157	0	0	0	0	0	0	0	0	0
N.W. AFOGNAK SECTION											
(251-30,40,41,50)	21	254	53,083	257,505	142	871	12,138	41,947	2,409	16,177	0
SHUYAK ISLAND SECTION											
(251-60,70,81)	0	0	0	0	0	0	0	0	0	0	0
PERENOSA & PAULS BAYS SECTIONS COMBINED											
(251-82,83,84,85)	11	112	46,383	214,730	237	1,608	3,377	10,830	133	932	0
N.E.AFOGNAK SECTION											
(251-90, 252-10,20)	203	977	3,783	19,259	2,087	11,806	58,091	177,294	18,664	122,859	0
Personal use of commercial catch	2	24	0	0	0	0	0	0	0	0	0
DUCK, IZHUT, & KITOI BAYS SECTIONS COMBINED											
(252-30,31,32,35)	1,673	10,327	238,532	1,344,135	68,575	470,518	2,171,253	6,770,911	320,532	2,075,493	0
Personal use of commercial catch	13	161	330	1,682	1,760	11,221	3,618	9,045	0	0	0
S.E.AFOGNAK											
(252-33,34)	3	19	13,960	74,288	547	3,322	8,695	29,348	396	2,551	0
Personal use of commercial catch	4	76	0	0	6	36	0	0	0	0	0
Subtotal	2,374	16,030	373,085	2,000,701	76,719	518,986	2,305,449	7,193,007	352,431	2,285,137	
Northwest Kodiak District											
UGANIK, TERROR, VIEKODA, & KUPREANOF AREAS COMBINED											
(253-11,12,13,14,31-35)	1,687	16,656	179,725	1,049,216	27,152	187,859	398,812	1,368,886	54,936	382,263	0
Personal use of commercial catch	19	209	399	2,185	196	1,123	1,327	4,313	2	14	0
UYAK, SPIRIDON, & ZACHAR, AREAS COMBINED											
(254-10,20,21,30,31,40,41)	1,753	16,656	97,970	539,930	18,110	120,295	236,799	819,414	40,131	282,035	0
TELROD COVE (SHA)											
(254-50)	2	36	111,459	618,270	8	50	12,178	36,579	1,638	14,044	0
Personal use of commercial catch	0	0	30	180	0	0	0	0	0	0	0
NORTH CAPE, ANTON LARSEN, SHERATIN, & KIZHUYAK AREAS COMBINED											
(259-30,31,33,34,35,36,37,38,39)	77	1,020	36,916	214,614	5,864	37,247	135,140	448,109	18,065	132,635	0
Personal use of commercial catch	2	24	91	616	12	68	50	161	0	0	0
Subtotal	3,540	34,601	426,590	2,425,011	51,342	346,642	784,306	2,677,462	114,772	810,991	

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Table 39.-Page 2 of 3.

District	Section	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Southwest Kodiak District											
INNER and OUTER KARLUK SECTION											
(255-10, 20)		11	27	7,874	35,776	1,366	9,551	5,816	19,073	1,507	9,121
Personal use of commercial catch		0	0	30	165	0	0	0	0	0	0
STURGEON SECTION											
(256-40)		0	0	0	0	0	0	0	0	0	0
HALIBUT BAY SECTION											
(256-25,30)		501	3,827	25,350	136,333	1,881	12,105	52,215	158,234	8,814	65,936
INNER & OUTER AYAKULIK SECTIONS											
(256-10,15,20)		210	2,142	148,401	848,691	1,232	8,051	78,433	260,067	2,244	14,623
Personal use of commercial catch		5	52	0	0	0	0	0	0	0	0
Subtotal		727	6,048	181,655	1,020,965	4,479	29,707	136,464	437,374	12,565	89,680
Alitak District											
CAPE ALITAK AND HUMPY-DEADMAN SECTIONS											
(257-10,20,50,60,70)		2,610	25,097	140,022	820,102	4,831	29,871	4,843,003	15,087,176	37,274	250,498
Personal use of commercial catch		2	43	126	693	0	0	0	0	0	0
ALITAK BAY, MOSER BAY, OLGA BAY, AND OUTER UPPER STATION SECTIONS											
(257-30,40,41,42,43)		23	284	178,186	961,895	1,263	9,434	53,498	205,604	7,425	50,731
Personal use of commercial catch		0	0	0	0	0	0	283	977	55	375
Subtotal		2,635	25,424	318,334	1,782,690	6,094	39,305	4,896,784	15,293,757	44,754	301,604
Eastside Kodiak District											
SEVEN RIVERS SECTION											
(258-70,80,83,85,90)		392	4,317	18,844	117,505	4,743	31,824	1,054,109	3,289,604	5,470	35,921
Personal use of commercial catch		35	442	0	0	0	0	0	0	0	0
TWO-HEADED SECTION											
(258-54,55,60)		728	8,363	64,298	405,501	8,775	58,446	2,044,944	6,631,526	26,327	182,398
Personal use of commercial catch		5	75	0	0	0	0	0	0	0	0
SITKALIDAK SECTION											
(258-10,20,30,40,51,52,53)		3,958	40,223	252,670	1,595,383	26,694	172,759	3,887,124	12,591,168	106,863	742,067
Personal use of commercial catch		32	395	74	382	22	132	1,102	3,527	0	0
INNER & OUTER UGAK											
(259-40,41,42,43,44,45,46)		1,192	11,698	37,938	227,438	3,651	23,027	385,861	1,258,579	25,057	178,519
Personal use of commercial catch		6	70	3	15	9	57	0	0	0	0
Subtotal		6,348	65,583	373,827	2,346,224	43,894	286,245	7,373,140	23,774,404	163,717	1,138,905

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Table 39.—Page 3 of 3.

District	Section	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Northeast Kodiak District											
MONASHKA MILLBAY SECTION											
(259-10)		0	0	19	96	13	91	922	3,227	44	309
BUSKIN RIVER AND INNER AND OUTER CHINIAK BAY SECTIONS											
(259-21,22,23,24,25,26,27)		179	1,966	6,112	34,064	1,008	6,283	902,472	3,213,477	24,101	166,090
Personal use of commercial catch		17	181	25	128	4	20	10	32	10	65
Subtotal		196	2,147	6,156	34,288	1,025	6,394	903,404	3,216,736	24,155	166,464
Mainland District											
BIG RIVER SECTION											
(262-10,15)		0	0	11	80	12	80	23	70	38	267
HALLO BAY SECTION											
(262-20)		0	0	0	0	0	0	0	0	0	0
INNER AND OUTER KUKAK BAY SECTIONS											
(262-25,27,30)		7	37	193	1,081	88	551	749	2,276	6,070	40,598
DAKAVAK BAY SECTION											
(262-35,40,45,50,55)		466	3,247	30,552	191,907	4,136	23,530	27,687	91,780	14,673	99,803
KATMAI SECTION											
(262-60)		7	104	4,122	26,679	553	2,973	2,110	6,211	1,379	8,145
ALINCHAK BAY SECTION											
(262-65,70)		70	691	1,901	12,306	94	657	166,490	573,934	15,116	106,888
CAPE IGVAK AND WIDE BAY SECTIONS											
(262-75,80,85,90,95)		2,233	21,046	552,670	3,600,573	2,047	15,454	52,186	174,289	74,892	517,123
Personal use of commercial catch		12	130	206	1,687	0	0	0	0	0	0
Subtotal		2,795	25,255	589,655	3,834,313	6,930	43,245	249,245	848,560	112,168	772,824
TOTAL excluding personal use											
Personal use of commercial catch		18,454	173,049	2,267,988	13,436,459	188,474	1,257,867	16,642,402	53,423,245	824,495	5,565,151
		161	2,039	1,314	7,733	2,009	12,657	6,390	18,055	67	454
GRAND TOTAL		18,615	175,088	2,269,302	13,444,192	190,483	1,270,524	16,648,792	53,441,300	824,562	5,565,605

Note: Catch numbers include personal use with commercial gear and ADF&G test fisheries.

Table 40.—Estimated age composition of commercial sockeye salmon catches by sample area, Kodiak Management Area, 2011.

District Catch Area	Sample Size		0.3	1.2	2.1	1.3	2.2	2.3	3.2	3.3	Other ^a	Total
NW Kodiak District												
Uganik-Viekoda-Kupreanof	2,963	Percent Numbers	2.7 4,866	8.8 15,853	0.0 0	46.9 84,448	18.6 33,560	20.3 36,655	1.7 3,013	0.8 1,454	0.2 275	100.0 180,124
Uyak Bay	3,174	Percent Numbers	1.4 1,347	6.5 6,372	0.0 0	40.2 39,350	25.3 24,797	18.4 18,014	6.4 6,267	1.5 1,499	0.3 324	100.0 97,970
Spiridon SHA (Telrod Cove)	1,370	Percent Numbers	0.0 0	13.4 14,935	0.3 378	25.4 28,360	43.0 47,930	17.7 19,783	0.0 0	0.0 0	0.1 103	100.0 111,489
Afognak District												
Foul Bay SHA	546	Percent Numbers	0.0 0	46.1 20,342	0.2 82	48.5 21,412	1.7 741	2.6 1,153	0.0 0	0.0 0	0.9 412	100.0 44,142
Waterfall Bay SHA	555	Percent Numbers	0.0 0	62.7 23,233	0.2 62	31.0 11,493	2.0 744	1.0 372	0.0 0	0.0 0	3.1 1,159	100.0 37,063
SW Kodiak District												
Ayaklik-Halibut Bay	2,044	Percent Numbers	0.3 552	17.7 30,715	2.7 4,666	12.4 21,530	53.4 92,737	12.0 20,936	1.0 1,814	0.2 391	0.2 410	100.0 173,751
Inner and Outer Karluk*	295	Percent Numbers	0.0 0	0.7 45	7.5 490	1.0 67	51.9 3,406	1.7 111	30.5 2,003	2.4 156	4.4 289	100.0 6,567
Alitak Bay District												
Moser-Olga-Alitak (gillnet)	3,275	Percent Numbers	0.5 831	4.8 8,464	0.7 1,166	12.5 22,325	65.7 116,997	14.9 26,596	0.7 1,296	0.0 82	0.2 428	100.0 178,186
Total	14,222	Percent Number	0.9 7,597	14.5 119,959	0.8 6,844	27.6 228,985	38.7 320,912	14.9 123,621	1.7 14,393	0.4 3,582	0.4 3,400	100.0 829,292

Note: Does not include Test Fishery Catch.

^a The “Other” age class listed in the table above consists of age-0.1, -0.2, -1.1, -0.4, -3.1, -1.4, -2.4, -3.4, -4.2 and -4.3.

Table 41.—Estimated age composition of Uganik-Viekoda-Kupreanof bays (253-11, 12, 13, 14, 31, 32, 33, 35) commercial sockeye salmon catch by week, 2011.

Statistical Week	Sample Size		Age												Total		
			0.2	0.3	1.2	1.3	1.4	2.2	2.3	2.4	3.1	3.2	3.3	4.2			
24 6/7–6/13	350	Percent	0.0	1.2	13.5	42.5	0.0	16.7	16.2	0.2	0.2	4.5	4.5	0.2	100.0		
		Numbers	0	118	1,292	4,111	0	1,604	1,551	24	24	432	432	24	9,609		
25 6/14–6/20	363	Percent	0.0	0.1	6.7	67.8	0.0	10.7	13.8	0.0	0.0	0.5	0.5	0.0	100.0		
		Numbers	0	7	906	9,228	0	1,451	1,870	0	0	73	73	0	13,607		
28 7/5–7/11	380	Percent	0.0	2.4	8.3	50.2	0.0	17.4	21.6	0.0	0.0	0.1	0.0	0.0	100.0		
		Numbers	0	1,218	4,163	25,064	0	8,699	10,796	0	0	26	0	0	49,965		
29 7/12–7/18	364	Percent	0.0	4.5	9.0	48.8	0.0	17.5	20.0	0.0	0.0	0.2	0.0	0.0	100.0		
		Numbers	0	2,732	5,518	30,073	0	10,769	12,313	0	0	145	21	0	61,571		
30 7/19–7/25	344	Percent	0.0	2.5	10.2	45.8	0.0	15.4	24.2	0.0	0.0	0.4	1.5	0.0	100.0		
		Numbers	0	592	2,403	10,820	0	3,647	5,726	2	0	85	347	0	23,622		
31 7/26–8/1	365	Percent	0.0	1.2	7.9	30.2	0.0	32.2	21.7	0.5	0.0	3.7	2.6	0.0	100.0		
		Numbers	2	111	720	2,769	3	2,905	1,973	42	0	332	235	0	9,092		
32 8/2–8/8	362	Percent	0.8	1.1	11.2	27.2	1.0	28.2	22.9	0.0	0.0	5.6	2.0	0.0	100.0		
		Numbers	47	69	700	1,723	63	1,793	1,443	3	0	348	129	1	6,318		
34 8/16–8/22	363	Percent	0.0	0.5	3.5	12.0	0.2	43.5	15.6	0.2	0.0	20.3	3.7	0.5	100.0		
		Numbers	0	20	147	495	10	1,769	635	10	0	802	151	20	4,057		
35 8/23–8/29	72	Percent	0.0	0.0	0.3	7.4	0.0	40.6	15.3	0.0	0.0	33.4	2.9	0.0	100.0		
		Numbers	0	1	5	105	0	566	214	0	0	462	40	1	1,394		
36–38 8/30–9/19	0	Percent	0.0	0.0	0.0	6.9	0.0	40.3	15.3	0.0	0.0	34.7	2.8	0.0	100.0		
		Numbers	0	0	0	62	0	358	136	0	0	309	25	0	889		
Total		2,963	Percent	0.0	2.7	8.8	46.9	0.0	18.6	20.3	0.0	0.0	1.7	0.8	0.0	100.0	
			Numbers	49	4,866	15,853	84,448	76	33,560	36,655	81	24	3,013	1,454	45	180,124	

Table 42.—Estimated age composition of Uyak Bay (254-10, 20, 30, 40) commercial sockeye salmon catch by week, 2011.

Statistical Week	Sample Size	Age													Total	
		0.3	0.4	1.2	1.3	1.4	2.2	2.3	2.4	3.1	3.2	3.3	4.2	4.3		
24 6/7–6/13	356	Percent	1.6	0.3	8.6	39.1	0.0	25.0	16.7	0.0	0.0	5.8	2.9	0.0	0.0	100.0
		Numbers	83	12	431	1,958	0	1,239	829	2	2	289	144	0	0	4,989
25 6/14–6/20	358	Percent	3.6	0.0	10.3	49.6	0.0	17.0	12.7	0.3	0.3	4.9	1.4	0.0	0.0	100.0
		Numbers	161	0	459	2,218	0	760	566	13	12	218	61	0	0	4,468
28 7/5–7/11	367	Percent	2.0	0.0	7.6	54.1	0.0	17.7	17.4	0.6	0.0	0.2	0.5	0.0	0.0	100.0
		Numbers	397	0	1,484	10,615	0	3,408	3,355	119	0	40	80	0	0	19,499
29 7/12–7/18	370	Percent	1.1	0.0	7.0	47.5	0.0	20.0	22.4	0.0	0.0	0.7	1.3	0.0	0.0	100.0
		Numbers	256	0	1,706	11,773	0	5,007	5,462	0	0	190	346	0	0	24,739
30 7/19–7/25	369	Percent	2.0	0.0	7.3	43.9	0.0	19.7	24.8	0.0	0.0	1.5	0.8	0.0	0.0	100.0
		Numbers	291	0	1,063	6,400	0	2,889	3,622	0	0	233	125	0	0	14,623
31 7/26–8/1	364	Percent	1.1	0.0	5.7	31.4	0.0	30.6	20.9	0.0	0.0	6.6	3.7	0.0	0.0	100.0
		Numbers	108	0	568	3,103	4	3,035	2,068	0	0	653	364	0	0	9,903
32 8/2–8/8	372	Percent	0.8	0.0	6.5	41.7	0.3	19.1	26.4	0.0	0.0	3.3	1.9	0.0	0.0	100.0
		Numbers	39	0	331	2,111	14	993	1,338	0	0	188	97	1	1	5,112
34 8/23–9/19	0	Percent	0.2	0.0	3.9	14.6	0.3	42.9	10.1	0.0	0.0	25.4	2.1	0.2	0.2	100.0
		Numbers	13	0	212	812	15	2,275	560	0	0	1,338	115	11	11	5,360
35 8/23–9/19	356	Percent	0.0	0.0	1.7	3.7	0.2	55.0	2.6	0.0	0.0	33.9	1.9	0.2	0.7	100.0
		Numbers	0	0	118	196	12	2,964	160	0	0	1,870	113	12	30	5,475
36 8/23–9/19	70	Percent	0.0	0.0	0.0	4.3	0.0	58.6	1.4	0.0	0.0	32.9	1.4	0.0	1.4	100.0
		Numbers	0	0	0	160	0	2,184	53	0	0	1,225	53	0	53	3,728
37 8/23–9/19	0	Percent	0.0	0.0	0.0	4.3	0.0	58.6	1.4	0.0	0.0	32.9	1.4	0.0	1.4	100.0
		Numbers	0	0	0	3	0	43	1	0	0	24	1	0	1	74
Total	2,982	Percent	1.4	0.0	6.5	40.2	0.0	25.3	18.4	0.1	0.0	6.4	1.5	0.0	0.1	100.0
		Numbers	1,347	12	6,372	39,350	44	24,797	18,014	134	14	6,267	1,499	23	96	97,970

Table 43.—Estimated age composition of Spiridon Bay (Telrod Cove: 254-50) Special Harvest Area sockeye salmon catch by week, 2011.

Statistical Week	Sample Size		Age						Total	
			1.1	1.2	1.3	2.1	2.2	2.3		
26 6/21–6/27	215	Percent	0.0	5.4	31.0	0.0	42.0	21.6	100.0	
		Numbers	0	796	4,628	4	6,252	3,223	14,902	
27 6/28–7/04	361	Percent	0.0	10.2	29.4	0.2	42.6	17.6	100.0	
		Numbers	0	2,983	8,892	58	12,877	5,385	30,195	
28 7/05–7/11	207	Percent	0.0	15.6	27.0	0.0	42.4	15.0	100.0	
		Numbers	0	3,578	6,340	9	9,850	3,485	23,261	
29 7/12–7/18	211	Percent	0.1	20.3	18.7	0.2	43.7	16.9	100.0	
		Numbers	9	5,636	5,305	26	12,108	4,612	27,695	
30 7/19–7/25	215	Percent	0.4	18.1	18.8	1.3	43.5	17.9	100.0	
		Numbers	24	965	1,030	73	2,372	983	5,447	
31 7/26–8/01	143	Percent	0.7	9.8	21.7	2.1	44.8	21.0	100.0	
		Numbers	41	571	1,265	122	2,611	1,224	5,834	
32 8/02–8/08	0	Percent	0.7	9.8	21.7	2.1	44.8	21.0	100.0	
		Numbers	13	189	418	40	863	404	1,928	
33 8/09–8/15	0	Percent	0.7	9.8	21.7	2.1	44.8	21.0	100.0	
		Numbers	16	218	483	47	997	467	2,227	
Total		Percent	0.1	13.4	25.4	0.3	43.0	17.7	100.0	
		Numbers	103	14,935	28,360	378	47,930	19,783	111,489	

Table 44.—Length composition of Spiridon Bay (Telrod Cove: 254-50) Special Harvest Area sockeye salmon catch samples by age and sex, 2011.

	Age						Total
	1.1	1.2	1.3	2.1	2.2	2.3	
Females							
Mean Length (mm)	—	517	575	—	532	575	550
SE	—	2	1	—	1	2	2
Range	—	470–565	500–618	—	456–592	510–617	456–618
Sample Size	0	84	211	0	345	143	783
Males							
Mean Length (mm)	350	532	599	421	557	598	568
SE	10	4	2	7	2	2	2
Range	340–360	434–618	539–645	380–442	422–625	527–673	340–673
Sample Size	2	87	130	7	237	106	569
All Fish							
Mean Length (mm)	350	525	584	421	542	585	557
SE	10	2	1	7	1	2	1
Range	340–360	434–618	500–645	380–442	422–625	510–673	340–673
Sample Size	2	171	341	7	582	249	1,352

Table 45.—Estimated sex composition of Spiridon Bay (Telrod Cove: 254-50) Special Harvest Area sockeye salmon catch by week, 2011.

Statistical Week	Dates	Sample Size			Harvest				Total
		Females	Males	Total	Percent	Females	Males	Number	
26	6/21–6/27	125	115	240	52.7	47.3	7,846	7,056	14,902
27	6/28–7/04	235	165	400	57.6	42.4	17,386	12,809	30,195
28	7/05–7/11	133	107	240	56.0	44.0	13,031	10,230	23,261
29	7/12–7/18	137	103	240	57.4	42.6	15,893	11,802	27,695
30	7/19–7/25	156	83	239	63.8	36.2	3,477	1,970	5,447
31	7/26–8/01	98	61	159	61.6	38.4	3,596	2,238	5,834
32	8/02–8/08	0	0	0	61.6	38.4	1,188	740	1,928
33	8/09–8/15	0	0	0	61.6	38.4	1,373	854	2,227
Total		884	634	1,518	57.2	42.8	63,790	47,699	111,489

Table 46.—Estimated age composition of Foul Bay (251-41) and Waterfall Bay (251-84) Special Harvest Areas commercial sockeye salmon, 2011.

Special Harvest Area	Statistical Week	Sample Size	Age						Total	
			1.1	1.2	1.3	2.1	2.2	2.3		
Foul Bay	24–29	536	Percent	0.9	46.1	48.5	0.2	1.7	2.6	100.0
SHA	6/07–7/18		Numbers	412	20,342	21,412	82	741	1,153	44,142
Waterfall	24–27	528	Percent	3.1	62.7	31.0	0.2	2.0	1.0	100.0
SHA	6/07–7/04		Numbers	1,159	23,233	11,493	62	744	372	37,063

Table 47.—Length composition of Foul Bay SHA (251-41) and Waterfall Bay SHA (251-84) sockeye salmon catch samples by age and sex, 2011.

Foul Bay SHA	Age						Total
	1.1	1.2	1.3	2.1	2.2	2.3	
Females							
Mean Length (mm)	—	520	556	—	517	568	540
SE	—	3	3	—	12	21	3
Range	—	400–620	490–620	—	490–560	500–630	400–630
Sample Size	0	108	130	0	6	5	249
Males							
Mean Length (mm)	422	549	583	—	593	566	563
SE	9	3	3	—	9	15	3
Range	400–450	440–640	450–650	—	580–610	470–620	400–650
Sample Size	5	139	130	0	3	9	286
All Fish							
Mean Length (mm)	422	536	570	—	542	566	552
SE	9	2	2	—	15	12	2
Range	400–450	400–640	450–650	—	490–610	470–630	400–650
Sample Size	5	247	260	0	9	14	535

Waterfall Bay SHA	Age						Total
	1.1	1.2	1.3	2.1	2.2	2.3	
Females							
Mean Length (mm)	—	471	533	—	495	533	490
SE	—	2	3	—	8	3	3
Range	—	410–546	447–581	—	481–508	530–536	410–581
Sample Size	0	157	70	0	3	2	232
Males							
Mean Length (mm)	349	499	553	383	515	550	512
SE	6	2	2	—	8	18	3
Range	319–387	390–582	451–600	—	479–540	508–595	319–600
Sample Size	12	168	102	1	9	4	296
All Fish							
Mean Length (mm)	349	485	545	383	510	545	503
SE	6	2	2	—	7	12	2
Range	319–387	390–582	447–600	—	479–540	508–595	319–600
Sample Size	12	325	172	1	12	6	528

Table 48.—Estimated age composition of Inner and Outer Ayakulik and Halibut Bay sections (256-10, 15, 20, 25, 30) commercial sockeye salmon catch, 2011.

Statistical Week	Sample Size	Age												Total	
		0.2	0.3	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	Total		
25 6/14–6/20	354	Percent	0.8	0.8	29.2	41.4	0.0	0.0	19.7	7.7	0.0	0.3	0.0	100.0	
		Numbers	173	173	6,023	8,558	0	3	3,992	1,573	0	58	0	20,554	
29 7/12–7/18	350	Percent	0.0	0.0	15.8	10.6	0.0	2.2	57.8	12.7	0.0	0.6	0.3	100.0	
		Numbers	13	13	9,538	6,363	0	1,346	34,962	7,690	0	341	168	60,435	
30 7/19–7/25	359	Percent	0.0	0.9	15.8	10.8	0.0	1.8	56.4	12.9	0.1	1.1	0.2	100.0	
		Numbers	0	292	5,080	3,465	0	568	18,174	4,179	37	363	75	32,233	
31 7/26–8/1	252	Percent	0.0	0.3	16.8	7.4	0.0	2.9	56.5	13.1	0.3	2.3	0.5	100.0	
		Numbers	0	18	3,241	994	0	707	10,609	2,044	18	253	36	17,920	
32 8/2–8/8	369	Percent	0.0	0.0	18.3	4.5	0.1	4.7	60.4	10.9	0.0	1.1	0.1	100.0	
		Numbers	0	21	5,080	1,376	62	1,374	17,439	3,394	0	403	41	29,189	
33 8/9–8/15	360	Percent	0.0	0.3	13.0	5.8	0.8	5.0	56.3	15.3	0.0	3.0	0.5	100.0	
		Numbers	0	23	1,175	510	69	442	5,021	1,351	0	258	46	8,895	
34–36 8/23–9/5	0	Percent	0.0	0.3	12.8	5.8	0.8	5.0	56.1	15.6	0.0	3.1	0.6	100.0	
		Numbers	0	13	578	264	38	226	2,539	704	0	138	25	4,525	
Total		Percent	0.1	0.3	17.7	12.4	0.1	2.7	53.4	12.0	0.0	1.0	0.2	100.0	
		Numbers	186	552	30,715	21,530	168	4,666	92,737	20,936	55	1,814	391	173,751	

Table 49.—Estimated age composition of Outer Karluk Section (255-20) commercial sockeye salmon catch, 2011.

Statistical Week	Sample Size		Age									Total	
			1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.2		
35 8/23–8/29	0	Percent	0.7	1.0	7.5	51.9	1.7	4.1	30.5	2.4	0.3	100.0	
		Numbers	20	30	218	1,515	50	119	891	69	10	2,921	
36 8/30–9/05	295	Percent	0.7	1.0	7.5	51.9	1.7	4.1	30.5	2.4	0.3	100.0	
		Numbers	12	17	128	892	29	70	525	41	6	1,720	
37 9/06–9/12	0	Percent	0.7	1.0	7.5	51.9	1.7	4.1	30.5	2.4	0.3	100.0	
		Numbers	13	20	144	999	33	78	588	46	7	1,926	
Total		Percent	0.7	1.0	7.5	51.9	1.7	4.1	30.5	2.4	0.3	100.0	
		Numbers	54	80	589	4,099	134	322	2,411	188	27	6,567	

Table 50.—Estimated age composition of Olga Bay, Alitak Bay, and Moser Bay sections (257-40, 41, 43) commercial sockeye salmon catch, 2011.

Statistical Week	Sample Size	Age													Total
		0.3	0.4	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3		
24 6/7–6/13	358	Percent	0.6	0.1	5.3	7.7	0.2	0.2	61.8	23.2	0.2	0.0	0.6	0.1	100.0
		Numbers	111	21	1,018	1,470	37	37	11,898	4,481	37	0	119	21	19,249
25 6/14–6/20	293	Percent	0.0	0.3	3.5	4.8	0.0	0.0	63.9	25.8	0.0	0.0	1.3	0.3	100.0
		Numbers	4	31	324	451	0	0	6,000	2,422	0	0	125	31	9,388
26 6/21–6/27	320	Percent	1.1	0.0	4.7	5.5	0.0	0.0	67.8	20.7	0.0	0.0	0.3	0.0	100.0
		Numbers	191	0	777	911	0	0	11,271	3,443	0	0	46	0	16,638
27 6/28–7/4	355	Percent	0.3	0.0	4.5	4.2	0.0	0.0	74.9	16.1	0.0	0.0	0.0	0.0	100.0
		Numbers	20	0	324	304	0	0	5,388	1,155	0	0	0	0	7,191
28 7/5–7/11	261	Percent	0.1	0.0	4.0	12.6	0.0	1.9	69.6	11.8	0.0	0.0	0.0	0.0	100.0
		Numbers	48	0	1,372	4,919	5	716	24,229	4,142	0	0	0	0	35,431
29 7/12–7/18	367	Percent	1.1	0.0	1.6	44.8	0.2	0.2	23.8	28.0	0.1	0.1	0.2	0.0	100.0
		Numbers	271	0	323	11,549	52	31	4,661	7,138	16	16	31	0	24,088
30 7/19–7/25	319	Percent	1.0	0.0	5.0	8.9	0.0	0.7	74.8	8.5	0.2	0.2	0.5	0.0	100.0
		Numbers	155	0	754	1,430	3	113	11,307	1,337	36	36	80	0	15,251
31 7/26–8/1	336	Percent	0.2	0.0	8.1	4.0	0.0	1.3	81.4	4.5	0.1	0.1	0.4	0.0	100.0
		Numbers	33	0	1,416	678	2	227	14,091	767	10	8	68	0	17,298
32 8/2–8/8	354	Percent	0.0	0.0	7.1	1.9	0.2	0.2	84.2	4.4	0.2	0.0	1.7	0.0	100.0
		Numbers	0	0	1,840	493	60	42	21,979	1,156	60	0	463	6	26,099
34 8/16–8/22	312	Percent	0.0	0.0	4.2	1.6	0.0	0.0	81.7	7.4	0.0	0.0	4.8	0.3	100.0
		Numbers	0	0	315	121	0	0	6,173	557	0	0	363	24	7,553
Total	3,275	Percent	0.5	0.0	4.8	12.5	0.1	0.7	65.7	14.9	0.1	0.0	0.7	0.0	100.0
		Numbers	831	52	8,464	22,325	158	1,166	116,997	26,596	159	60	1,296	82	178,186

Table 51.—Estimated age composition of Cape Alitak and Humpy-Deadman Sections (257-10,20,50,60,70) commercial sockeye salmon catch, 2011.

Statistical Week	Sample Size		Age									Total
			0.3	1.2	1.3	1.4	2.2	2.3	2.4	3.2	3.3	
29 7/12–7/18	376	Percent	1.8	5.2	49.6	0.4	12.4	30.1	0.2	0.2	0.2	100.0
		Numbers	483	1,333	13,030	98	3,198	7,887	49	44	44	26,164
30 7/19–7/25	179	Percent	0.6	14.0	32.4	0.0	28.5	23.5	0.0	0.6	0.6	100.0
		Numbers	85	2,126	4,931	0	4,336	3,571	0	85	85	15,219
Total	555	Percent	1.4	8.4	43.4	0.2	18.2	27.7	0.1	0.3	0.3	100.0
		Numbers	568	3,458	17,961	98	7,534	11,458	49	129	129	41,383

Table 52.—Estimated age composition of Kitoi Bay Section (252-32) commercial chum salmon catch, 2011.

Statistical Week	Sample Size	Age			Total	
		0.2	0.3	0.4		
24–25 6/07–6/20	0 Percent Numbers	0.9	96.7	2.4	100.0	
		17	1,731	42	1,790	
26 6/21–6/27	134 Percent Numbers	1.3	97.3	1.4	100.0	
		267	21,015	313	21,595	
27 6/28–7/04	68 Percent Numbers	1.7	98.3	0.0	100.0	
		126	7,342	3	7,472	
32 8/02–8/08	68 Percent Numbers	1.4	96.5	2.1	100.0	
		387	26,489	580	27,456	
33–35 8/06–8/29	0 Percent Numbers	1.4	96.5	2.1	100.0	
		15	1,048	23	1,086	
37 9/06–9/12	0 Percent Numbers	1.4	96.5	2.1	100.0	
		0	3	0	3	
Total	202	Percent Numbers	1.4 813	97.0 57,628	1.6 962	100.0 59,402

Table 53.—Spiridon Lake sockeye salmon estimated catch by area and estimated total run by age class, 2011.

Area	Sample Size	Age						Total		
		1.1	1.2	1.3	2.1	2.2	2.3			
<i>Estimated Spiridon Catch by Area</i>										
Spiridon Bay Special Harvest Area (SBSHA-Telrod Cove: 254-50)										
	1,352	Percent	0.1	13.4	25.4	0.3	43.0	17.7	100.0	
		Numbers	103	14,935	28,360	378	47,930	19,783	111,489	
SW Afognak Section and NW Kodiak District										
	5,945	Percent ^a	0.1	13.4	25.4	0.3	43.0	17.7	100.0	
		Numbers ^b	51	7,475	14,195	189	23,991	9,902	55,804	
Total Run	7,297	Percent	0.1	13.4	25.4	0.3	43.0	17.7	100.0	
		Numbers	154	22,410	42,555	567	71,921	29,686	167,293	

^a Age composition based on samples collected at SBSHA.

^b The estimate of Spiridon contribution in the commercial harvest was quantified via visual Scale Pattern Analysis (SPA) of the Uyak and Uganik-Viekoda-Kupreanof commercial scale samples utilizing the unique scale pattern of the Spiridon age-2.2 fish.

Table 54.—Karluk Lake early-run sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2011.

Area	Sample Size	Age												Total		
		0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2			
<i>Estimated Karluk Early-Run Catch by Area</i>																
Uyak Bay (254-10 – 254-40)																
1,451	Percent	0.0	0.0	5.4	5.7	0.0	39.0	10.9	0.4	21.3	17.1	0.0	0.0	100.0		
	Numbers	1	0	177	188	0	1,278	359	14	699	562	0	0	3,278		
Uganik-Viekoda-Kupreanof (253-11 – 253-35)																
1,457	Percent	0.0	0.0	5.4	5.7	0.0	38.8	10.9	0.8	21.0	17.3	0.0	0.1	100.0		
	Numbers	1	0	162	171	0	1,166	327	24	631	519	0	4	3,006		
Cape Uyak Test Fishery (255-20)																
745	Percent	0.0	0.0	5.1	5.4	4.2	36.8	10.3	1.7	26.5	9.8	0.0	0.1	100.0		
	Numbers	0	0	27	28	22	192	54	9	138	51	0	1	522		
Total Catch	3,653	Percent	0.0	0.0	5.4	5.7	0.3	38.7	10.9	0.7	21.6	16.6	0.0	0.1	100.0	
		Numbers	2	0	366	387	22	2,636	740	46	1,469	1,133	0	5	6,805	
<i>Karluk Early-Run Escapement</i>																
1,717	Percent	0.0	0.4	4.0	4.2	18.4	28.7	8.1	7.5	17.6	10.7	0.2	0.1	100.0		
	Numbers	18	338	3,466	3,669	16,028	24,978	7,013	6,486	15,337	9,316	176	95	128	87,049	
Total Run	5,370	Percent	0.0	0.4	4.1	4.3	17.1	29.4	8.3	7.0	17.9	11.1	0.2	0.1	100.0	
		Numbers	20	338	3,832	4,056	16,049	27,614	7,754	6,532	16,806	10,449	176	101	128	93,854

Note: Catches were apportioned to Karluk using a freshwater-age-3 marker.

Table 55.—Karluk Lake early-run sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age															Total Return/ Return Spawner			
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	4.1	2.4	3.3	4.2	8yo	9yo	
1976	204,037																	0		
1977	185,312																	0	0	
1978	248,741																	0	0	
1979	212,872																	0	0	
1980	132,396							0	11,635	193,760	4,085	0	103,899	60,395	0	0	37,689	0	0	0
1981	97,937		0	8,558	18,604	0	3,735	278,831	1,672	0	117,158	38,129	0	272	22,433	0	0	0	0	
1982	122,705	0	1,244	841	4,650	5,466	0	21,058	197,293	4,169	0	93,560	37,079	0	0	20,728	0	0	320	
1983	215,620	0	143	564	8,159	7,032	0	14,244	149,947	1,728	0	183,829	33,945	0	337	14,082	0	0	0	
1984	288,422	0	0	0	4,090	8,393	0	5,830	97,537	738	0	94,258	30,589	0	908	19,634	0	0	0	
1985	316,688	0	0	24	4,258	2,842	0	3,969	72,857	3,010	0	88,599	57,934	0	1,955	40,331	0	68	0	
1986	358,756	24	0	337	6,152	2,201	346	6,443	87,691	4,031	94	129,381	131,218	0	479	61,223	1,508	348	0	
1987	354,094	427	0	1,456	958	2,884	0	8,503	114,504	19,876	416	44,051	337,905	0	285	60,244	2,309	2,659	0	
1988	296,510	0	0	0	8,383	6,297	0	9,708	84,322	13,770	0	37,096	202,729	0	320	70,357	231	2,945	0	
1989	349,753	0	1,621	0	8,492	7,624	0	13,979	104,564	5,517	0	167,751	101,296	0	1	69,709	5,362	1,713	0	
1990	196,197	0	181	0	18,149	2,780	0	50,649	79,156	6,586	652	146,751	97,063	0	269	70,863	760	0	0	
1991	243,069	0	1,224	1,062	26,661	12,015	0	83,430	326,422	7,087	0	127,809	81,364	809	107	12,113	2,476	247	0	
1992	217,152	0	2,669	4	9,627	9,642	0	13,159	52,730	14,935	0	42,891	58,375	0	769	36,603	0	79	0	
1993	261,169	2	1,534	350	3,309	18,252	0	7,718	226,377	2,275	0	128,158	35,029	0	1,752	42,563	437	288	0	
1994	260,771	0	1,017	0	8,956	7,266	0	41,179	294,780	1,857	427	182,133	54,148	0	587	33,887	1,781	1,042	0	
1995	238,079	0	218	0	23,268	13,106	0	33,004	231,809	3,463	0	245,934	83,559	0	1,405	52,470	835	492	0	
1996	250,357	0	0	0	2,063	5,959	0	2,217	253,847	2,326	0	215,129	84,029	0	61	42,035	0	1,575	0	
1997	252,859	0	0	1,838	3,930	11,696	0	6,691	233,964	3,274	0	131,879	63,748	0	0	24,066	0	0	0	
1998	252,298	0	574	0	4,258	19,885	0	5,410	531,206	4,517	532	168,024	104,530	715	0	14,578	0	0	0	
1999	392,419	0	898	0	15,382	28,948	0	33,620	432,204	10,393	76	192,314	80,270	0	0	48,461	0	116	0	
2000	291,351	0	939	0	9,611	4,286	0	3,393	223,141	6,013	129	109,252	78,082	0	483	74,506	523	1,561	0	
2001	338,799	0	0	0	3,223	6,573	0	1,102	216,151	5,644	0	274,770	51,394	0	3,144	42,585	425	895	0	
2002	456,842	0	78	0	4,894	11,188	0	7,592	69,773	1,251	99	59,363	12,086	0	698	4,882	0	0	0	
2003	451,856	0	0	286	2,237	9,403	0	1,150	30,926	638	49	15,852	15,878	621	1	1,494	686	128	79,349	
2004	393,468	760	0	99	196	390	0	946	17,044	4,700	0	5,120	32,065	0	0	10,449	101		71,870	
2005	283,860	0	279	0	6,029	1,257	0	2,506	14,088	4,245	0	7,754	16,806	176						
2006	202,366	0	0	23	15,167	5,207	0	4,056	27,614	6,532										
2007	294,740	0	759	20	3,832	16,049														
2008	82,191	0	338																	
2009	52,798																			
2010	71,453																			
2011	87,049																			

10-year average (1995–2004): 491,775 1.7

Table 56.—Karluk Lake late-run sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2011.

Area	Sample Size	Age												Total		
		0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.2	4.3			
<i>Estimated Karluk Late-Run Catch by Area</i>																
Uyak Bay (254-10 – 254-40)																
1,901	Percent	1.0	0.0	1.4	0.7	0.0	52.5	9.0	0.0	29.8	5.0	0.1	0.5	100.0		
	Numbers	184	0	259	123	0	9,808	1,681	0	5,568	937	23	96	18,680		
Uganik-Viekoda-Kupreanof (253-11 – 253-35)																
1,870	Percent	1.0	0.0	1.4	0.7	0.0	52.7	9.0	0.0	25.1	9.9	0.2	0.0	100.0		
	Numbers	94	0	132	63	0	5,001	857	0	2,382	934	21	0	9,485		
Ayakulik-Halibut Bay (256-10 – 256-30)																
1,690	Percent	0.0	0.0	0.7	1.0	7.5	51.9	1.7	4.1	30.5	2.4	0.3	0.0	100.0		
	Numbers	0	0	15	23	169	1,173	38	92	690	54	8	0	2,263		
Inner and Outer Karluk (255-10 – 255-20)																
295	Percent	0.0	0.0	0.7	0.6	6.5	51.6	1.8	4.2	31.7	2.5	0.4	0.0	100.0		
	Numbers	0	0	45	41	412	3,256	111	267	2,003	156	22	0	6,314		
Total Catch	5,756	Percent	0.8	0.0	1.2	0.7	1.6	52.4	7.3	1.0	29.0	5.7	0.2	0.3	100.0	
		Numbers	278	0	452	249	581	19,239	2,688	359	10,644	2,081	75	96	36,741	
<i>Karluk Late-Run Escapement</i>																
1,240	Percent	0.8	0.0	1.2	0.6	7.8	45.2	7.8	5.0	27.0	2.9	0.9	0.7	100.0		
	Numbers	1,957	0	2,755	1,304	17,910	104,155	17,855	11,606	62,285	6,788	2,010	1,650	230,273		
Total Run	6,996	Percent	0.8	0.0	1.2	0.6	6.9	46.2	7.7	4.5	27.3	3.3	0.8	0.7	100.0	
	Numbers	2,235	0	3,207	1,553	18,490	123,394	20,543	11,965	72,929	8,868	2,084	1,746	267,014		

Note: Catches were apportioned to Karluk using a freshwater-age-3 marker.

Table 57.—Karluk Lake late-run sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age															Total Return	Return/Spawner		
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	4.2	8yo	9yo	
1976	319,459																	0		
1977	366,936																	0	0	
1978	112,194																0	0	0	
1979	248,908																0	0	0	
1980	14,227																0	0	0	
1981	124,769				0	5,158	13,129	0	0	402,872	2,521	0	187,293	49,557	0	14,077	0	0	0	
1982	41,702	0	0	0	0	0	1,261	0	5,239	290,631	606	0	110,997	34,711	0	19,631	0	0	0	
1983	220,795	0	0	0	4,079	4,160	12,830	0	480	241,803	1,268	31	213,452	42,156	2,070	47,370	0	0	569,699	
1984	131,846	0	885	0	0	445	6,246	0	30,516	424,123	0	937	303,542	271,018	471	71,764	651	0	1,110,598	
1985	679,260	169	0	0	1,084	30,165	212	189	60,235	784,914	494	595	493,743	421,972	462	43,998	0	42	1,838,274	
1986	528,415	0	893	0	15,519	39,109	978	105	57,974	835,214	1,162	0	114,862	655,219	563	60,240	325	1,770	0	1,783,933
1987	412,157	106	5,976	201	17,067	24,703	1,737	0	550	226,552	2,373	0	23,389	320,723	79	54,451	1,600	0	0	679,507
1988	282,306	0	2,531	111	2,424	4,649	1,512	0	3,127	189,196	7,249	0	71,078	212,649	0	16,740	0	9	0	511,274
1989	758,893	0	3,555	799	3,717	5,909	12,607	0	3,302	308,439	6,233	0	151,212	214,110	0	12,030	950	0	0	722,863
1990	541,891	0	3,591	971	6,292	16,995	3,241	0	10,310	447,371	1,085	18	52,479	80,226	591	62,392	1,095	64	0	686,721
1991	831,970	0	7,113	340	2,879	16,292	3,023	0	8,568	340,535	4,731	52	191,311	85,334	952	13,107	659	111	0	675,007
1992	614,262	0	1,567	1,923	0	3,880	6,759	0	12,234	57,188	5,043	0	76,196	138,987	513	28,379	0	0	0	332,669
1993	396,288	0	0	1,501	2,860	3,550	17,168	0	11,541	412,758	1,362	36	202,913	75,591	0	23,523	0	0	0	752,802
1994	587,258	0	0	198	1,192	24,718	4,323	0	17,261	616,350	1,008	0	159,094	109,890	551	41,274	821	128	0	976,808
1995	504,977	0	1,156	0	3,219	48,766	8,685	0	1,839	353,857	5,252	0	390,880	129,216	424	28,253	405	1,668	0	973,619
1996	323,969	0	540	633	0	2,970	108	0	469	283,071	2,817	0	149,445	139,820	0	83,431	0	934	0	664,238
1997	311,902	0	0	407	0	1,473	21,821	0	291	494,043	18,682	0	268,631	235,707	0	12,330	0	421	0	1,053,807
1998	384,848	0	0	136	0	586	33,787	1,399	2,716	923,141	8,407	0	78,063	143,454	0	12,558	0	284	0	1,204,530
1999	589,119	0	0	0	0	25,117	41,401	0	7,645	403,399	3,410	85	154,603	210,642	0	65,446	0	302	0	912,050
2000	445,393	155	669	51	3,376	6,049	270	0	1,126	531,303	2,955	0	292,380	55,025	2,875	100,967	1,046	4,014	10	1,002,271
2001	524,739	0	0	0	0	2,543	5,375	0	2,611	132,216	3,786	0	305,575	113,907	13,374	38,224	0	262	0	617,873
2002	408,734	0	0	62	2,790	3,319	12,383	0	6,844	183,353	672	361	161,086	25,895	9	14,881	99	528	0	412,282
2003	626,854	0	0	208	1,750	2,494	1,544	0	1,887	41,395	2,247	0	15,635	269,401	0	5,707	10,460	1,746	354,474	0.6
2004	326,466	0	277	5	301	1,998	510	0	543	15,162	10,973	0	7,084	223,546	0	8,868	2,084		271,352	0.8
2005	498,102	0	3,532	63	0	423	2,022	0	544	63,514	768	0	20,543	72,929	0					
2006	288,007	0	0	15	0	1,734	2,029	0	1,553	123,394	11,965									
2007	251,835	0	0	81	2,235	3,207	18,490													
2008	164,299	0	0	0																
2009	277,280	0																		
2010	276,649																			
2011	230,273																			

10-year average (1995–2004): 746,649 1.8

Table 58.—Ayakulik River (Red Lake) sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2011.

Area	Sample Size	Age													Total		
		0.1	0.2	0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2			
<i>Estimated Ayakulik Catch by Area</i>																	
Ayakulik-Halibut Bay (256-10 – 256-30) through 15 July																	
	704	Percent	0.0	0.6	0.6	0.0	25.4	32.7	0.0	0.6	30.4	9.1	0.0	0.0	0.4	0.1	100.0
		Numbers	0	175	175	0	7,323	9,425	0	186	8,756	2,621	0	0	105	23	28,789
Ayakulik-Halibut Bay (256-10 – 256-30) post 15 July																	
	1,690	Percent	0.0	0.0	0.3	0.0	16.2	8.4	0.1	3.0	58.0	12.4	0.0	0.0	1.1	0.2	100.0
		Numbers	0	11	368	0	23,007	11,929	143	4,329	82,287	17,611	0	55	1,617	343	141,944
Total Catch	2,394	Percent	0.0	0.1	0.3	0.0	17.8	12.5	0.1	2.6	53.4	11.9	0.0	0.0	1.0	0.2	100.0
		Numbers	0	186	543	0	30,330	21,354	143	4,515	91,043	20,232	0	55	1,721	366	170,490
<i>Ayakulik Escapement</i>																	
Early Run																	
	1,440	Percent	0.0	0.0	0.5	6.1	30.0	26.7	0.0	9.6	20.9	6.1	0.0	0.0	0.2	0.0	100.0
		Numbers	0	0	828	10,747	53,186	47,381	81	16,979	37,056	10,869	0	26	327	0	177,480
Late Run																	
	539	Percent	0.1	0.0	0.1	7.4	21.5	10.3	0.1	16.6	40.3	3.3	0.2	0.1	0.1	0.0	100.0
		Numbers	95	0	83	6,165	18,021	8,589	83	13,860	33,677	2,746	195	81	65	0	83,661
Total Escapement	1,979	Percent	0.0	0.0	0.3	6.5	27.3	21.4	0.1	11.8	27.1	5.2	0.1	0.0	0.2	0.0	100.0
		Numbers	95	0	910	16,912	71,207	55,970	164	30,839	70,733	13,615	195	107	392	0	261,141
Total Run																	
	4,373	Percent	0.0	0.0	0.3	3.9	23.5	17.9	0.1	8.2	37.5	7.8	0.0	0.0	0.5	0.1	100.0
		Numbers	95	186	1,454	16,912	101,537	77,324	307	35,354	161,777	33,847	195	163	2,114	366	431,631

Note: In 2011, 100% of the Ayakulik and Halibut Bay sections harvest through 8/15 was attributed to Ayakulik based on age composition of the samples. After 8/15, 33% was attributed to Ayakulik.

Table 59.—Ayakulik River (Red Lake) sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age													Total Return	Return/ Spawner			
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4		
1976	219,047	0	0	5,835	3,855	405,330	8,408	0	164,495	187,009	0	0	61,395	0	0	0	0	836,328	3.8
1977	306,982	0	0	0	0	5,060	3,431	0	18,656	170,721	0	0	85,541	3,940	0	0	0	287,349	0.9
1978	132,864	0	0	0	0	1,556	15,799	0	14,937	45,081	0	0	42,151	2,747	0	0	0	122,273	0.9
1979	222,270	0	0	3,625	441	16,345	18,352	0	40,958	131,539	0	0	41,815	1,438	0	0	0	254,511	1.1
1980	774,328	0	0	11,780	13,347	402,761	24,781	0	232,583	305,083	0	0	159,440	2,762	0	0	0	1,152,537	1.5
1981	279,200	0	0	17,149	0	310,784	7,450	0	230,889	328,622	0	0	168,527	28,564	0	0	0	1,091,984	3.9
1982	169,678	0	0	6,857	7,500	1,626	2,596	0	16,351	123,667	0	0	77,129	4,751	0	0	0	240,476	1.4
1983	171,415	0	0	548	1,171	20,198	15,116	0	72,231	168,055	0	0	104,765	0	0	0	0	382,085	2.2
1984	283,215	0	0	7,779	3,311	138,185	78,899	0	72,319	197,026	0	0	103,450	3,347	0	0	0	604,316	2.1
1985	388,759	0	0	61,345	3,903	365,489	18,971	0	589,731	513,314	0	0	229,750	4,276	0	0	0	1,786,779	4.6
1986	318,135	0	0	4,480	38,326	571,371	6,489	0	506,463	365,644	0	0	231,471	5,967	0	0	0	1,730,211	5.4
1987	261,913	0	0	12,991	15,380	173,341	13,602	0	103,512	317,142	0	0	341,728	32,807	0	5,063	0	1,015,566	3.9
1988	291,774	0	0	2,822	3,351	81,584	2,832	0	62,159	126,124	0	0	27,783	10,655	0	8,225	0	325,535	1.1
1989	768,101	0	0	2,571	5,565	26,297	29,189	0	18,318	310,379	0	0	254,557	59,553	0	46,238	0	752,667	1.0
1990	371,282	0	0	1,028	8,047	3,618	14,638	0	59,035	295,167	0	0	202,600	16,202	0	102	38	600,475	1.6
1991	384,859	0	640	22,371	17,118	145,925	36,123	0	393,249	482,187	0	19	158,923	5,779	64	2,796	112	1,265,306	3.3
1992	344,184	0	4,591	2,578	9,900	65,889	24,694	205	10,135	200,817	2,188	2,685	230,460	19,788	1,983	6,010	112	582,035	1.7
1993	286,170	0	0	3,093	3,678	2,504	16,283	400	176,539	409,718	516	8,075	138,504	7,591	344	5,426	0	772,671	2.7
1994	380,181	0	465	42,711	7,275	555,246	35,908	17,036	338,728	344,937	546	79	102,628	7,224	401	1,737	0	1,454,921	3.8
1995	317,832	0	0	4,711	4,707	101,292	18,181	516	53,759	227,822	3,186	0	240,294	22,068	1,125	6,135	0	683,795	2.2
1996	337,155	0	269	1,770	17,050	16,902	8,589	332	93,851	198,161	364	0	143,934	802	291	244	0	482,559	1.4
1997	308,214	0	5	1,250	4,810	14,447	5,395	597	11,767	34,814	330	0	16,169	727	0	1,490	0	91,802	0.3
1998	427,208	62	0	4,554	597	29,683	2,929	0	12,657	97,574	1,470	602	46,305	10,818	234	4,760	40	212,288	0.5
1999	295,717	0	0	2,953	4,818	53,015	8,754	353	124,906	192,030	0	240	80,066	4,301	658	1,930	0	474,025	1.6
2000	208,651	130	0	2,261	7,074	56,453	5,858	0	40,660	148,872	148	0	26,019	893	539	2,481	0	291,390	1.4
2001	218,892	0	0	97	0	21,217	4,756	0	12,812	57,133	0	315	95,615	2,218	299	142	0	194,605	0.9
2002	229,292	0	0	499	121	13,352	4,881	141	61,713	162,634	214	1,386	67,474	189	477	311	0	313,392	1.4
2003	197,892	0	40	2,224	1,086	47,900	5,678	0	47,986	88,088	0	152	36,068	2,986	296	1,015	0	233,520	1.2
2004	275,238	0	0	2,445	3,358	24,944	5,073	152	59,544	163,974	0	625	34,630	3,192	195	0	298,131	1.1	
2005	251,906	0	67	5,423	694	99,530	13,239	0	73,594	260,808	1,059	307	33,847	2,480					
2006	87,780	0	0	8,645	839	110,179	16,074	0	77,324	161,777	163								
2007	283,042	0	0	15,958	1,454	101,723	35,354												
2008	162,888	0	0	16,912															
2009	315,184	95																	
2010	262,327																		
2011	261,141																		

10-year average (1995–2004): 327,551 1.2

Table 60.—Frazer Lake (Dog Salmon Creek) sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2011.

Area	Sample Size	Age												Total		
		0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	4.1			
<i>Estimated Frazer Catch by Area</i>																
Olga, Moser, and Alitak Bay gillnet sections (257-40, -43, -41) adjusted 95% for other stocks.																
	3,642	Percent	0.5	0.0	4.3	14.4	0.1	0.8	62.7	16.6	0.1	0.0	0.4	0.0	100.0	
		Numbers	600	0	4,961	16,487	150	899	71,957	19,094	151	42	461	0	114,802	
Cape Alitak and Humpy-Deadman sections (257-10, -20, -50, -60, -70) adjusted 80% for other stocks.																
	0	Percent	0.0	0.3	4.5	2.7	0.2	3.6	77.5	9.4	0.0	0.4	1.5	0.0	100.0	
		Numbers	25	195	3,476	2,106	119	2,798	60,465	7,353	10	315	1,151	4	78,018	
Total Catch	3,642	Percent	0.3	0.1	4.4	9.6	0.1	1.9	68.7	13.7	0.1	0.2	0.8	0.0	100.0	
		Numbers	625	195	8,437	18,593	269	3,697	132,423	26,447	161	357	1,612	4	192,820	
<i>Dog Salmon Creek Escapement</i>																
	2,251	Percent	0.0	2.5	2.7	1.6	0.1	35.9	46.6	5.7	0.0	4.0	0.9	0.0	100.0	
		Numbers	35	4,497	4,809	2,913	164	64,414	83,652	10,172	14	7,253	1,593	86	179,603	
Total Run	5,893	Percent	0.2	1.3	3.6	5.8	0.1	18.3	58.0	9.8	0.0	2.0	0.9	0.0	100.0	
		Numbers	660	4,692	13,247	21,506	434	68,111	216,074	36,619	175	7,610	3,204	90	372,423	

Table 61.—Frazer Lake (Dog Salmon Creek) sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age															Total Return	Return/ Spawner	
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	4.1	2.4	4.2	3.3	8yo		
1976	119,321	0	2,150	0	223,444	8,753	73,677	257,625	0	0	143,383	0	0	0	0	393	0	709,424	5.9
1977	139,548	0	2,764	0	73,189	2,928	92,211	107,917	0	0	146,064	393	0	0	0	0	0	425,466	3.0
1978	141,981	0	7,807	0	162,130	507	24,148	22,970	0	0	16,844	0	0	0	0	638	0	235,043	1.7
1979	126,742	0	507	0	1,374	982	2,965	24,323	0	0	26,791	0	0	0	0	2,165	0	59,106	0.5
1980	405,535	0	0	0	6,064	16,305	7,654	589,393	0	0	141,065	684	0	46	0	52	0	761,264	1.9
1981	377,716	0	876	0	12,120	0	2,455	7,748	0	172	5,239	0	0	0	0	862	0	29,471	0.1
1982	430,423	0	1,276	0	23,647	431	28,624	3,735	24	754	10,870	10,812	0	0	0	0	0	80,172	0.2
1983	158,340	0	10	26	8,935	9,729	13,438	380,531	1,604	0	586,833	0	0	0	0	36,986	0	1,038,092	6.6
1984	53,524	0	1,001	0	5,771	33,628	7,437	386,832	0	0	67,142	2,046	0	0	0	0	0	503,856	9.4
1985	485,835	0	192	0	16,502	4,399	49,290	53,978	151	0	22,578	9,032	0	1,595	0	2,694	0	160,412	0.3
1986	126,529	1,393	67,475	0	727,658	40,794	230,893	972,290	0	0	168,815	9,129	0	0	0	8,584	0	2,227,031	17.6
1987	40,544	0	1,787	1,851	3,019	26,596	3,902	187,581	0	0	159,822	104	0	156	0	882	0	385,701	9.5
1988	246,704	0	1,886	0	21,073	7,793	30,096	210,586	133	0	64,565	20,510	0	16	0	7,994	0	364,652	1.5
1989	360,373	0	16,191	208	327,929	12,847	153,078	373,277	5,752	0	300,182	145,325	0	0	0	40,754	0	1,375,543	3.8
1990	226,707	0	1,096	0	18,217	12,986	33,393	400,750	1,678	0	210,744	15,341	0	455	0	9,340	0	704,000	3.1
1991	190,358	0	621	0	2,031	57,463	1,728	330,834	302	0	105,361	630	0	0	0	0	0	498,970	2.6
1992	185,825	0	3,545	0	20,513	78,168	27,471	211,959	4,666	0	185,148	18,141	0	0	0	2,209	0	551,819	3.0
1993	178,391	0	2,529	45	12,677	41,759	56,178	291,218	4,831	0	64,155	17,867	0	256	0	5,830	0	497,344	2.8
1994	206,071	0	2,056	0	23,034	17,688	39,741	112,849	1,048	0	77,546	15,427	0	187	0	15,733	0	305,309	1.5
1995	196,323	0	10,106	0	59,574	39,574	77,223	152,287	1,251	0	251,356	11,284	0	815	0	5,387	0	608,857	3.1
1996	198,695	0	20,062	0	41,983	22,276	81,667	32,786	26	1,641	50,325	101	0	191	0	201	0	251,259	1.3
1997	205,264	0	626	0	8,327	1,639	9,831	14,560	231	630	15,665	2,251	0	0	0	0	77	53,837	0.3
1998	233,755	0	367	0	1,374	24,808	14,710	87,861	16,454	0	57,957	88,617	0	366	0	33,880	0	326,394	1.4
1999	216,565	0	1,152	0	3,507	136,968	77	481,220	0	0	241,075	1,299	0	496	0	2,090	97	867,981	4.0
2000	158,044	0	35,476	0	68,494	15,072	219,630	107,018	0	521	58,178	330	0	547	233	289	521	506,309	3.2
2001	154,349	0	814	0	21,700	557	5,639	3,657	23,842	131	11,476	29,633	293	776	718	81,003	1,501	181,739	1.2
2002	85,317	0	335	0	5,659	14,124	5,844	27,492	11,173	0	44,559	35,868	0	415	0	29,071	153	174,694	2.0
2003	201,679	0	3,365	0	8,565	58,042	16,372	170,743	2,948	0	81,058	31,271	0	162	0	1,004	0	373,528	1.9
2004	120,664	0	14,757	0	148,241	16,861	90,953	197,458	0	250	20,896	233	0	175	0	0	0	489,822	4.1
2005	136,949	0	1,993	0	34,005	9,131	34,164	29,710	8,606	434	36,619	3,204	90						
2006	89,516	0	113	224	5,281	58,888	21,506	216,074	7,610										
2007	120,185	0	5,543	660	13,247	68,111													
2008	105,363	0	4,692																
2009	101,845																		
2010	94,680																		
2011	134,565																		

10-Year Average (1995–2004):

383,442

2.2

Table 62.—South Olga Lakes (Upper Station) early-run sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2011.

Area	Sample Size	Age									Total		
		0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2			
<i>Estimated Upper Station Early-Run Catch by Area</i>													
Olga, Moser, and Alitak Bay gillnet sections (257-40, -43, -41) adjusted 95% for other stocks.													
3,642	Percent	0.7	0.0	3.9	17.8	0.2	52.9	24.0	0.0	0.5	100.0		
	Numbers	110	0	577	2,652	36	7,868	3,575	0	69	14,886		
Cape Alitak and Humpy-Deadman sections (257-10, -20, -50, -60, -70) adjusted 80% for other stocks.													
0	Percent	0.4	1.6	6.6	11.2	7.8	51.1	21.0	0.0	0.3	100.0		
	Numbers	18	74	312	529	370	2,408	990	0	15	4,717		
Total Catch													
3,642	Percent	0.7	0.4	4.5	16.2	2.1	52.4	23.3	0.0	0.4	100.0		
	Numbers	128	74	889	3,181	406	10,276	4,565	0	84	19,602		
<i>Upper Station Early Run Escapement</i>													
1,013	Percent	0.0	3.1	9.4	4.6	15.5	49.2	18.0	0.0	0.2	100.0		
	Numbers	8	904	2,689	1,332	4,444	14,164	5,168	4	46	28,759		
Total Run	4,655	Percent	0.3	2.0	7.4	9.3	10.0	50.5	20.1	0.0	100.0		
	Numbers	136	978	3,578	4,513	4,849	24,439	9,733	5	130	48,361		

Table 63.—South Olga Lakes (Upper Station) early-run sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age														Total Return	R/S	
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	3.3	2.4		
1975	10,325	0	0	0	0	1,458	208	0	6,393	14,783	0	0	8,738	485	0	0	32,065	3.1
1976	28,567	0	0	0	133	9,722	0	0	10,438	47,090	0	0	27,139	0	0	0	94,522	3.3
1977	26,380	0	0	0	0	32,041	243	0	48,850	94,081	0	0	35,526	634	0	0	211,375	8.0
1978	66,157	0	243	243	1,809	28,948	0	0	32,354	70,735	0	0	19,660	0	37	0	154,029	2.3
1979	53,115	0	0	0	0	4,124	0	0	17,554	65,300	0	46	14,870	38	142	0	102,074	1.9
1980	37,866	0	317	0	2,341	11,937	0	0	4,000	7,165	38	0	7,259	0	25	0	33,082	0.9
1981	77,042	0	0	0	542	2,832	1,498	0	4,370	85,872	0	43	23,861	0	0	0	119,018	1.5
1982	170,610	0	2,472	234	1,006	113,439	781	0	75,684	37,220	0	360	18,131	70	0	0	249,398	1.5
1983	115,890	0	285	1,220	1,181	5,491	1,205	0	11,396	87,555	0	0	41,723	217	0	0	150,273	1.3
1984	96,798	0	109	0	3,443	2,118	66	0	1,792	46,879	0	0	14,103	113	60	0	68,683	0.7
1985	27,408	0	1,476	4	2,865	2,314	22,466	0	6,714	86,949	0	0	42,895	633	64	0	166,380	6.1
1986	100,812	0	35	5,680	449	51,361	936	0	36,048	83,179	60	18	8,248	340	408	0	186,763	1.9
1987	74,747	0	2,134	46	1,022	2,027	3,849	0	726	30,417	27	0	25,242	779	57	0	66,326	0.9
1988	56,724	0	17	0	71	82	852	0	1,607	35,640	210	206	7,282	1,072	0	0	47,038	0.8
1989	64,582	0	450	404	5,823	8,751	6,313	0	5,539	67,810	0	0	34,127	0	0	0	129,217	2.0
1990	56,159	0	1,497	578	0	6,275	3,414	0	19,145	82,269	0	0	6,839	361	6	0	120,384	2.1
1991	50,026	0	407	3,258	20,467	46,391	6,815	0	57,478	131,931	0	0	27,274	0	0	0	294,021	5.9
1992	19,076	52	2,338	223	5,878	5,959	3,583	0	3,435	24,099	0	0	7,268	0	0	0	52,835	2.8
1993	34,852	219	669	605	2,423	5,189	2,741	0	11,812	31,749	0	0	5,168	1,229	0	62	61,866	1.8
1994	37,645	0	229	994	4,887	53,607	1,320	0	7,176	33,104	0	0	17,361	570	0	0	119,248	3.2
1995	41,492	0	185	2,467	5,857	33,691	1,497	360	44,415	44,608	0	492	20,938	689	92	0	155,291	3.7
1996	58,686	0	79	177	2,723	30,487	1,973	0	81,164	51,987	4	25	15,238	281	0	0	184,138	3.1
1997	47,655	0	422	45	0	972	2,438	0	558	11,566	34	0	7,233	795	2,006	0	26,069	0.5
1998	30,713	0	0	6	0	145	6,264	0	418	45,950	0	0	16,490	8	0	0	69,281	2.3
1999	36,521	0	0	2,598	328	27,894	6,080	0	34,497	81,382	0	360	38,405	626	28	0	192,198	5.3
2000	55,761	0	780	10,912	7,338	122,434	2,623	69	59,315	40,862	69	121	9,843	139	235	28	254,768	4.6
2001	66,795	0	1,131	1,123	3,856	6,472	5,116	0	4,335	15,475	0	24	13,764	0	0	0	51,298	0.8
2002	36,802	82	532	382	574	1,295	42	36	4,890	2,815	0	0	8,604	0	0	36	19,289	0.5
2003	76,175	0	75	502	88	10,903	3,245	0	9,334	34,250	0	106	13,258	86	0	0	71,846	0.9
2004	78,487	0	191	1,553	6,398	36,836	3,258	0	25,750	32,372	0	0	4,211	0	0	0	110,570	1.4
2005	60,349	0	233	281	0	5,884	3,446	0	3,904	42,706	64	0	9,733	130				
2006	24,997	0	0	269	0	1,815	2,367	0	4,513	24,439	5							
2007	31,895	0	71	26	136	3,578	4,849											
2008	38,800	0	0	978														
2009	34,585	0																
2010	42,060																	
2011	28,759																	

10-Year Average (1995–2004): 113,475 2.3

Table 64.—South Olga Lakes (Upper Station) late-run sockeye salmon estimated catch by area, escapement, and estimated total run by age class, 2011.

Area	Sample Size	Age											Total		
		0.1	0.3	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3			
<i>Estimated Upper Station Late-Run Catch by Area</i>															
Olga, Moser, and Alitak Bay gillnet sections (257-40, -43, -41) adjusted 95% for other stocks.															
3,642	Percent	0.0	0.2	0.0	6.3	5.2	0.4	79.3	6.6	0.0	1.8	0.1	100.0		
	Numbers	0	80	0	2,503	2,070	173	31,322	2,597	15	701	29	39,491		
Cape Alitak and Humpy-Deadman sections (257-10, -20, -50, -60, -70) adjusted 80% for other stocks.															
0	Percent	0.2	0.2	1.0	6.9	3.7	5.2	75.4	5.5	0.1	1.8	0.1	100.0		
	Numbers	47	52	279	2,040	1,076	1,529	22,156	1,613	26	537	29	29,384		
Total Catch															
3,642		0.1	0.2	0.4	6.6	4.6	2.5	77.6	6.1	0.1	1.8	0.1	100.0		
		47	132	279	4,543	3,146	1,702	53,478	4,210	41	1,238	58	68,875		
<i>Upper Station Late Run Escapement</i>															
1,768	Percent	0.3	0.2	1.9	7.5	2.1	10.0	71.5	4.4	0.1	1.9	0.1	100.0		
	Numbers	328	155	1,938	7,693	2,120	10,156	72,839	4,484	141	1,912	127	101,893		
Total Run	5,410	Percent	0.2	0.2	1.3	7.2	3.1	6.9	74.0	5.1	0.1	1.8	0.1	100.0	
		376	287	2,217	12,235	5,267	11,858	126,317	8,694	182	3,150	185	170,768		

Table 65.—South Olga Lakes (Upper Station) late-run sockeye salmon brood table showing estimated returns from parent escapements by age class.

Brood Year	Escap.	Age														Total Return	R/S	
		0.1	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	3.3	2.4		
1975	74,456	901	3,021	0	0	61,142	1,132	0	36,479	76,157	0	0	5,228	0	0	0	184,060	2.5
1976	48,650	0	10,190	0	36,479	38,399	2,560	0	11,501	141,154	0	0	10,336	940	0	0	251,559	5.2
1977	49,001	0	640	0	3,137	52,279	1,046	0	66,714	312,897	0	0	9,732	0	0	0	446,444	9.1
1978	38,126	0	82,601	1,046	90,205	134,367	4,698	0	55,146	217,342	0	0	26,755	2,638	0	0	614,798	16.1
1979	134,579	0	31,947	0	63,256	71,366	0	0	103,020	339,950	0	736	10,850	360	280	0	621,765	4.6
1980	77,718	0	124,890	0	56,178	35,951	2,131	0	21,758	55,472	399	0	16,555	965	223	0	314,522	4.0
1981	118,900	0	1,294	0	17,853	157,249	12,280	1,007	149,158	345,506	0	0	14,809	0	0	879	700,035	5.9
1982	306,161	0	644,017	5,129	324,600	364,312	5,029	117	92,824	231,963	0	0	5,168	2,042	0	0	1,675,201	5.5
1983	179,741	4,867	182,514	0	135,177	23,242	1,682	0	53,195	92,799	0	0	30,036	0	1,488	0	525,000	2.9
1984	239,608	3,012	37,733	528	89,721	187,451	5,064	0	21,543	224,033	0	0	23,712	4,642	0	0	597,438	2.5
1985	408,409	2,313	562,757	1,958	309,775	34,924	12,374	0	40,759	179,839	0	578	45,289	6,140	0	0	1,196,706	2.9
1986	367,922	1,449	72,415	1,953	94,380	291,815	5,610	678	116,039	451,917	0	0	17,721	1,579	1,289	6	1,056,851	2.9
1987	156,274	0	68,016	495	113,821	12,899	127	0	17,053	104,995	0	225	27,470	15,072	39	0	360,212	2.3
1988	247,647	0	9,222	216	27,793	76,583	1,000	0	71,330	80,102	177	133	4,037	1,244	0	0	271,836	1.1
1989	221,706	401	169,158	1,125	85,530	83,807	12,864	142	53,928	184,067	308	0	21,693	0	0	0	613,023	2.8
1990	198,287	1,432	56,992	3,904	115,907	27,747	7,728	444	17,591	237,284	0	0	4,315	0	67	0	473,411	2.4
1991	242,860	6,744	51,810	4,858	163,283	73,541	6,484	160	44,507	712,676	31	0	20,546	0	0	0	1,084,640	4.5
1992	199,067	4,913	61,018	1,108	15,733	58,923	12,611	79	6,302	279,349	0	0	7,189	156	192	26	447,599	2.2
1993	187,229	5,186	46,015	5,688	114,817	35,842	45,256	444	10,769	199,820	191	278	27,883	5,350	0	0	497,539	2.7
1994	221,675	1,417	10,206	6,322	23,167	90,488	17,439	44	25,603	293,322	80	0	6,069	968	0	0	475,125	2.1
1995	203,659	233	3,020	3,340	3,349	179,562	24,492	0	13,017	251,855	0	254	14,264	307	247	20	493,960	2.4
1996	235,727	277	1,972	6,536	1,335	35,606	4,057	0	15,478	88,856	121	1	4,856	2,282	0	1,500	162,877	0.7
1997	230,793	0	347	0	916	2,842	11,901	0	1,932	129,206	1,984	130	8,502	17,554	1,942	0	177,256	0.8
1998	171,214	0	0	89	0	2,511	13,979	0	3,281	219,890	25,325	0	13,190	890	0	0	279,155	1.6
1999	210,016	0	279	2,323	672	80,315	15,939	0	20,091	313,886	19	346	40,906	5,360	465	9	480,610	2.3
2000	176,783	96	34,433	5,197	36,394	122,248	4,045	98	30,388	181,491	0	31	16,677	986	187	165	432,436	2.4
2001	74,408	0	522	215	1,701	5,696	8,310	0	7,078	77,172	0	78	9,900	300	0	0	110,971	1.5
2002	150,349	411	2,421	3,965	7,179	94,543	8,085	0	21,609	95,473	0	0	13,730	0	0	235	247,650	1.6
2003	200,894	43	888	1,667	337	51,307	7,446	0	16,131	256,511	0	357	15,308	548	0	0	350,545	1.7
2004	177,108	669	5,264	1,535	24,845	99,160	7,094	0	29,761	255,957	181	0	5,577	1,457	185	0	431,685	2.4
2005	156,401	139	2,828	2,423	3,067	20,933	20,082	0	6,256	171,458	153	0	8,694	3,150				
2006	153,153	0	931	1,561	177	10,327	8,207	0	5,267	126,317	182							
2007	149,709	218	59	787	287	12,235	11,858											
2008	184,856	0	0	2,217														
2009	161,736	376																
2010	141,139																	
2011	101,893																	

10-Year Average (1995–2004): 316,714 1.8

Table 66.—Kodiak Salmon Test Fishery Summary, 2011.

Date	Start Time	Set #	Area	Clouds	Wind	Seas	Duration	Hook Direction	Tide Status	Catch			
										Sockeye	Chum	Chinook	
∞	6/7/2011	4:29 AM	1	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	30 minutes	South	flood	95	110	0
	6/7/2011	5:38 AM	2	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	25 minutes	South	flood	47	247	0
	6/7/2011	6:33 AM	3	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	27 minutes	South	slack/switch	91	204	0
	6/7/2011	7:36 AM	4	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	30 minutes	South	ebb	91	205	0
	6/7/2011	8:34 AM	5	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	30 minutes	South	ebb	86	47	0
	6/7/2011	9:32 AM	6	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	30 minutes	South	ebb	88	30	0
	6/7/2011	10:51 AM	7	Pafco Point	Mostly Cloudy	NE 20	8'-10'	30 minutes	South	ebb	14	0	0
	6/7/2011	12:00 PM	8	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	30 minutes	North	ebb	3	0	0
	6/7/2011	1:00 PM	9	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	30 minutes	South	slack/switch	137	65	0
	6/7/2011	2:07 PM	10	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	30 minutes	South	flood	102	85	5
	6/7/2011	3:30 PM	11	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	35 minutes	South	flood	110	17	0
	6/7/2011	4:20 PM	12	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	31 minutes	South	flood	99	10	0
	6/7/2011	5:15 PM	13	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	30 minutes	South	flood	0	0	0
	6/7/2011	6:55 PM	14	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	30 minutes	South	flood	153	5	0
	6/7/2011	7:49 PM	15	Cape Uyak	Mostly Cloudy	NE 20	8'-10'	29 minutes	South	slack/switch	29	7	0
∞	6/8/2011	4:15 AM	1	Cape Uyak	Mostly Cloudy	NE 15	6'-7'	30 minutes	South	flood	35	64	0
	6/8/2011	5:15 AM	2	Cape Uyak	Mostly Cloudy	NE 15	6'-7'	29 minutes	South	flood	11	5	0
	6/8/2011	6:01 AM	3	Cape Uyak	Mostly Cloudy	NE 15	6'-7'	30 minutes	South	flood	38	75	0
	6/8/2011	6:55 AM	4	Cape Uyak	Mostly Cloudy	NE 15	6'-7'	30 minutes	South	flood	26	64	0
	6/8/2011	7:45 AM	5	Cape Uyak	Mostly Cloudy	NE 15	6'-7'	30 minutes	South	slack/switch	47	44	0
	6/8/2011	8:35 AM	6	Cape Uyak	Mostly Cloudy	NE 15	6'-7'	29 minutes	South	ebb	7	4	0
									Total	1,309	1,288	5	

Table 67.—Estimated age composition of the Kodiak Salmon Test Fishery (255-20) sockeye salmon catch, 2011.

Statistical Week	Sample Size		Age												Total
			0.2	0.3	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	4.2	
24 6/07–6/13	745	Percent	0.3	1.7	14.2	22.1	0.4	2.1	34.1	9.9	0.7	10.3	3.9	0.1	100.0
		Numbers	2	13	106	165	3	16	254	74	5	77	29	1	745
Total	745	Percent	0.3	1.7	14.2	22.1	0.4	2.1	34.1	9.9	0.7	10.3	3.9	0.1	100.0
		Numbers	2	13	106	165	3	16	254	74	5	77	29	1	745

Table 68.—Genetics samples taken from salmon stocks within the Kodiak Management Area, 2011.

Species	Location	Region	Latitude	Longitude	Samplers	Sample Size	Collection Date
Sockeye	Red Lake-SW Shoals	Kodiak	N 57° 14.242	W 154° 17.856	Foster, Spalinger, Wattum	203	10/17/11
Sockeye	Red Lake - NW Shoals	Kodiak	N 57° 15.207	W 154° 20.183	Foster, Spalinger, Wattum	205	10/17/11
Sockeye	Red Lake- NE Shoals	Kodiak	N 57° 15.969	W 154° 19.106	Foster, Moore, Howard	224	9/16/11
Sockeye	Red Lake- South Shoals	Kodiak	N 57° 13.419	W 154° 16.138	Foster, Moore, Howard	211	9/16/11
Sockeye	Red Lake, Connecticut Crk Mouth	Kodiak	N 57° 15.842	W 154° 18.947	Foster, Creelman, Hunt, Wattum	200	7/18/11
Sockeye	Red Lake, Crystal Crk Mouth	Kodiak	N 57° 13.860	W 154° 15.900	Foster, Creelman, Hunt, Wattum	200	7/18/11
Sockeye	Red Lake - Prickle Creek Mouth	Kodiak	N 57° 14.215	W 154° 17.862	Foster, Creelman, Hunt, Wattum	39	7/18/11
Sockeye	Karluk Lake - SE Shoals	Kodiak	N 57° 16.744	W 153° 59.745	Foster, Moore, Howard	212	9/16/11
Sockeye	Akalura-NE Shoals	Kodiak	N 57° 11.425	W 154° 11.253	Foster, Moore, Howard	121	9/16/11
Sockeye	Horse Marine Lake	Kodiak	N 57° 7.386	W 153° 55.632	Foster, Creelman, Hunt, Wattum	16	7/18/11
Sockeye	Ayakulik Weir	Kodiak	N 57° 11.717	W 154° 31.824	Yngve, Weatherbee	70	8/8/11–9/2/11
Sockeye	Ayakulik Weir	Kodiak	N 57° 11.716	W 154° 31.823	Yngve, Weatherbee	60	7/21/11–7/25/11
Sockeye	Ayakulik Weir	Kodiak	N 57° 11.714	W 154° 31.821	Yngve, Weatherbee	101	7/16/11–7/20/11
Sockeye	Ayakulik Weir	Kodiak	N 57° 11.713	W 154° 31.820	Yngve, Weatherbee	107	7/11/11–7/15/11
Sockeye	Ayakulik Weir	Kodiak	N 57° 11.715	W 154° 31.822	Yngve, Weatherbee	149	7/6/11–7/10/11
Sockeye	Frazer Fishpass	Kodiak	N 57° 12.124	W 154° 3.362	Thompson, Woldstad	200	9/15/11
Sockeye	Dog Salmon Creek Weir	Kodiak	N 57° 7.80	W 154° 1.68	Dias, Jordan	100	7/27/11–8/14/11
Sockeye	Dog Salmon Creek Weir - JACKS ONLY	Kodiak	N 57° 7.80	W 154° 1.68	Dias, Jordan	122	7/27/11–7/31/11
Sockeye	Dog Salmon Creek Weir-East	Kodiak	N 57° 7.80	W 154° 1.68	Dias, Jordan	103	7/21/11–7/23/11
Sockeye	Dog Salmon Creek Weir-West	Kodiak	N 57° 7.86	W 154° 2.10	Dias, Jordan	108	7/20/11–7/22/11
Sockeye	Dog Salmon Creek Weir-East	Kodiak	N 57° 7.80	W 154° 1.68	Dias, Jordan	107	7/12/11–7/13/11
Pink	American River - Female	Kodiak	N 57° 38.16	W 152° 31.62	Foster, Moore, Witteveen	100	9/1/11
Pink	American River - Male	Kodiak	N 57° 38.16	W 152° 31.62	Foster, Moore, Witteveen	100	9/1/11

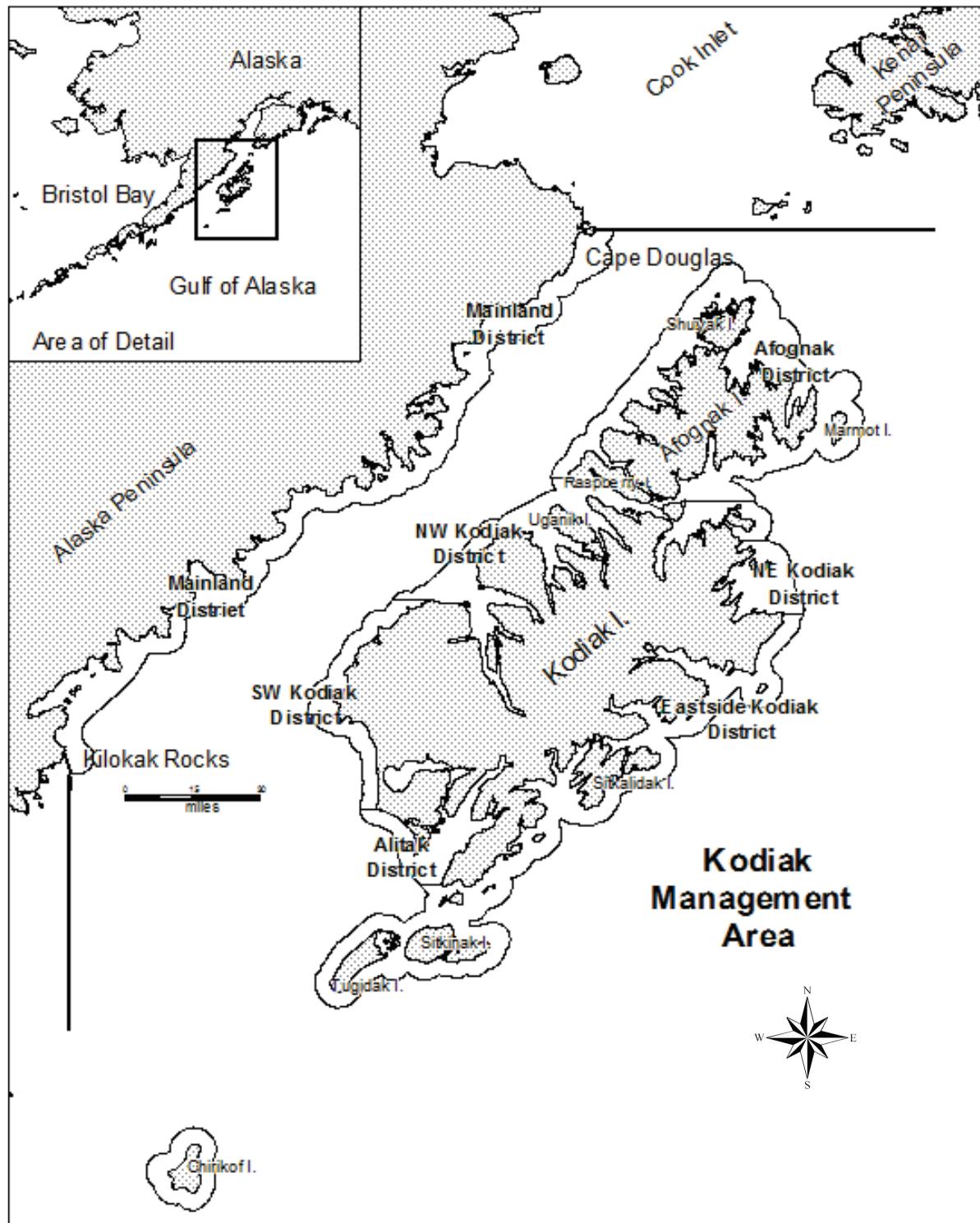


Figure 1.—Kodiak Management Area commercial salmon fishing districts.

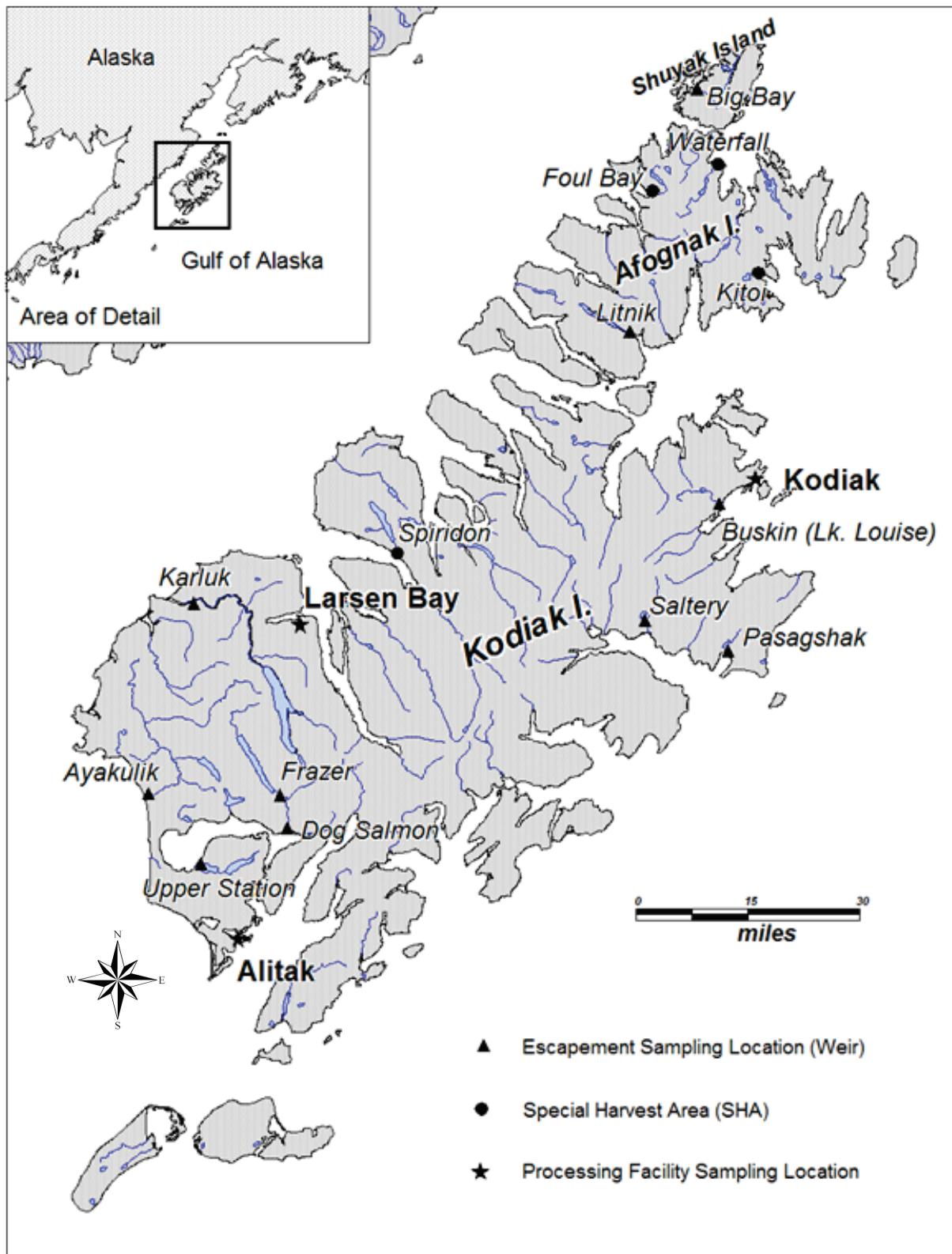


Figure 2.—Salmon escapement, special harvest areas, and processing facility sampling locations in the Kodiak Management Area, 2011.

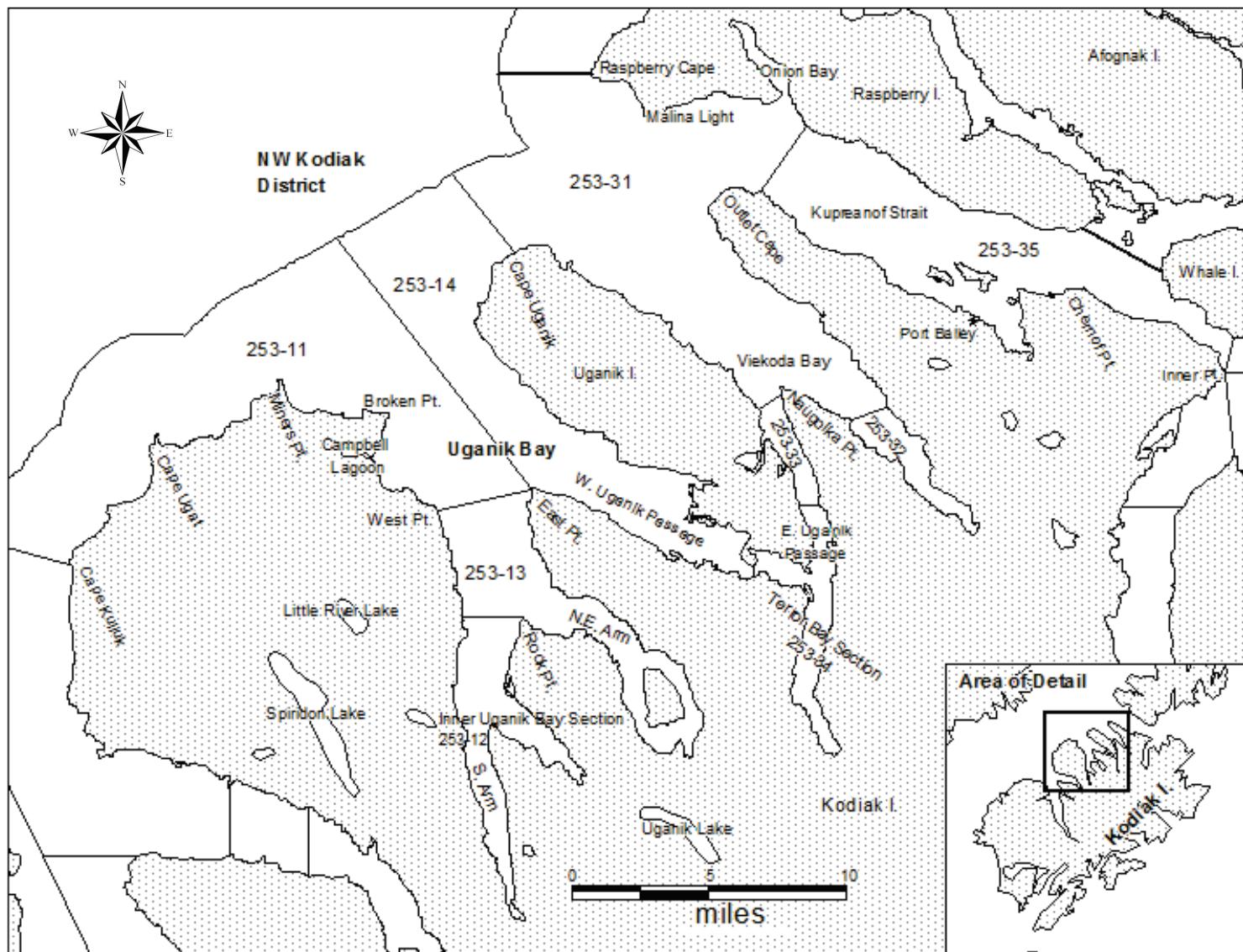


Figure 3.—Kodiak Management Area commercial salmon statistical areas sampled to represent Uganik/Viekoda/Kupreanof harvest within the Northwest Kodiak District.

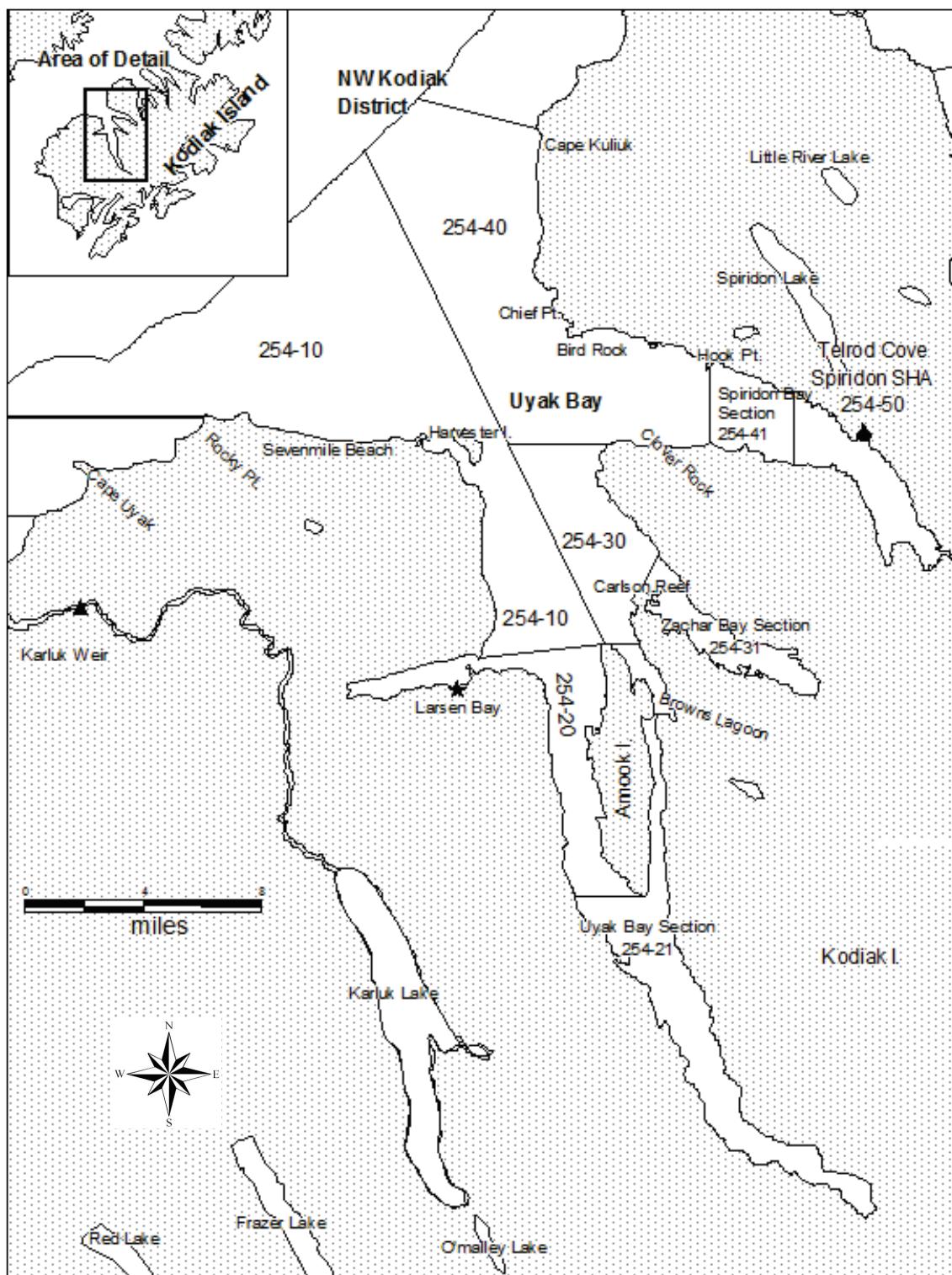


Figure 4.—Kodiak Management Area commercial salmon statistical areas sampled to represent Uyak Bay harvest within the Northwest Kodiak District.

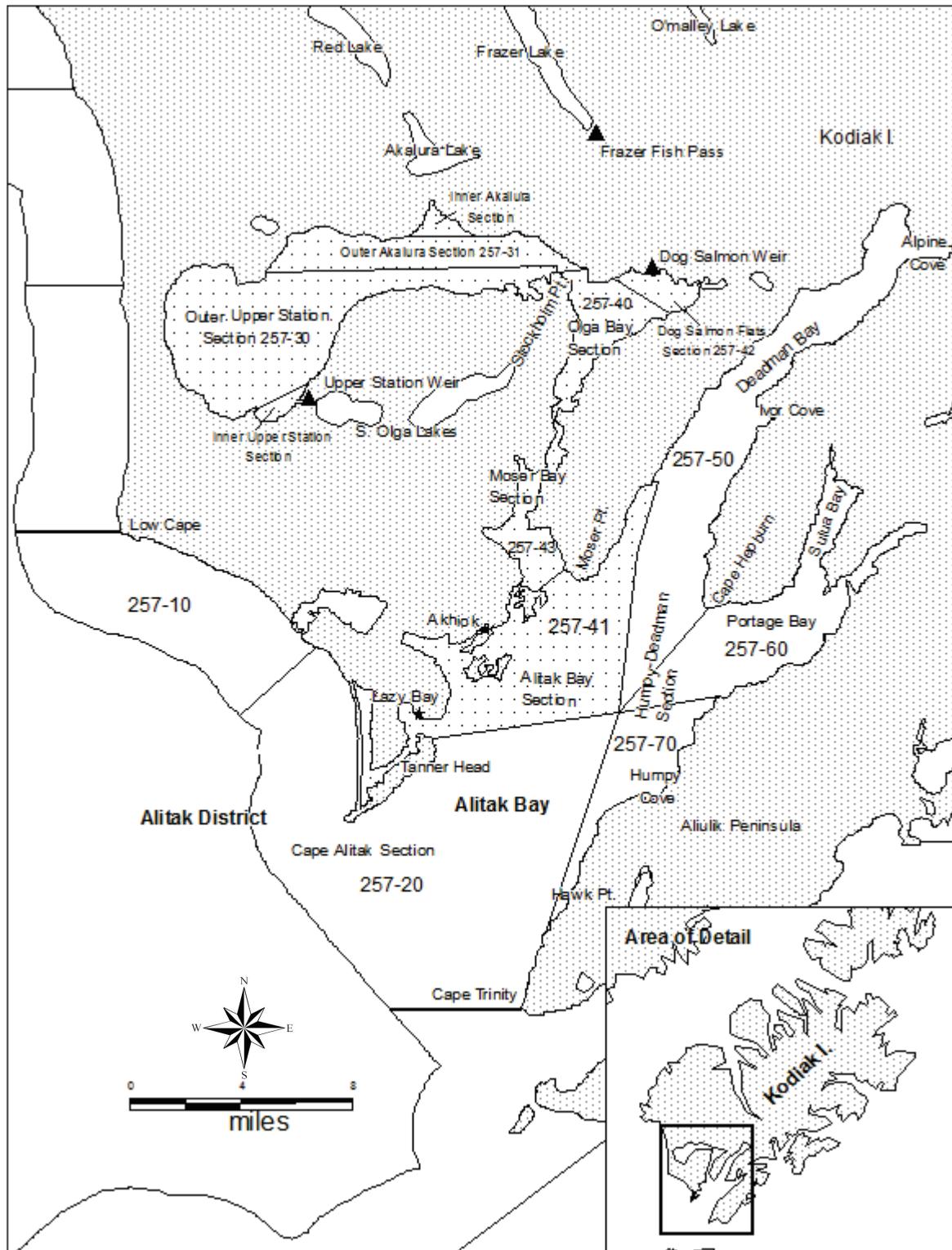


Figure 5.—Kodiak Management Area commercial salmon statistical areas sampled to represent Moser/Olga gillnet (dotted) and Alitak seine area harvest.

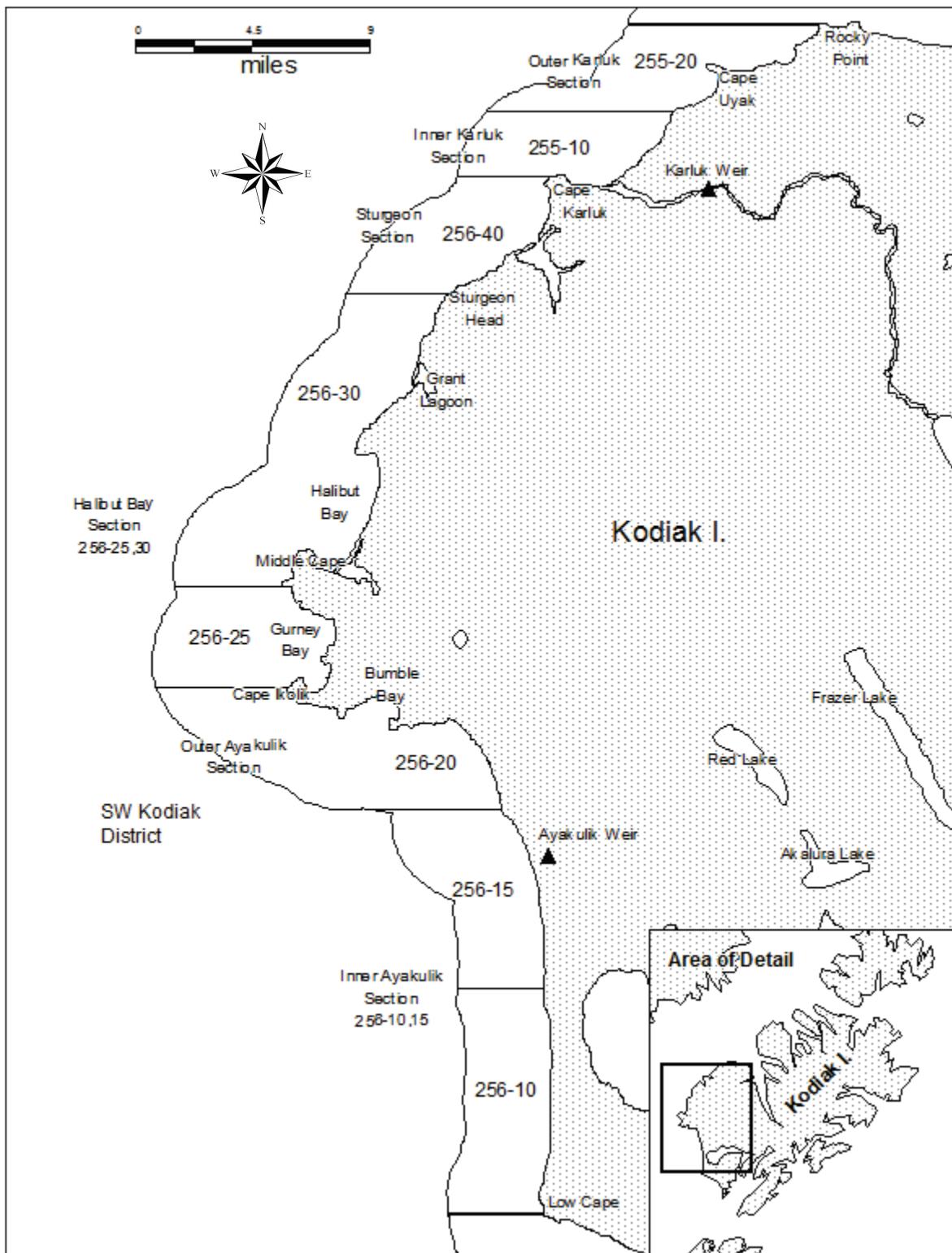


Figure 6.—Kodiak Management Area commercial salmon statistical areas sampled to represent the Southwest Kodiak District (Karluk/Sturgeon, Halibut/Gurney bays, and Ayakulik areas) harvests.

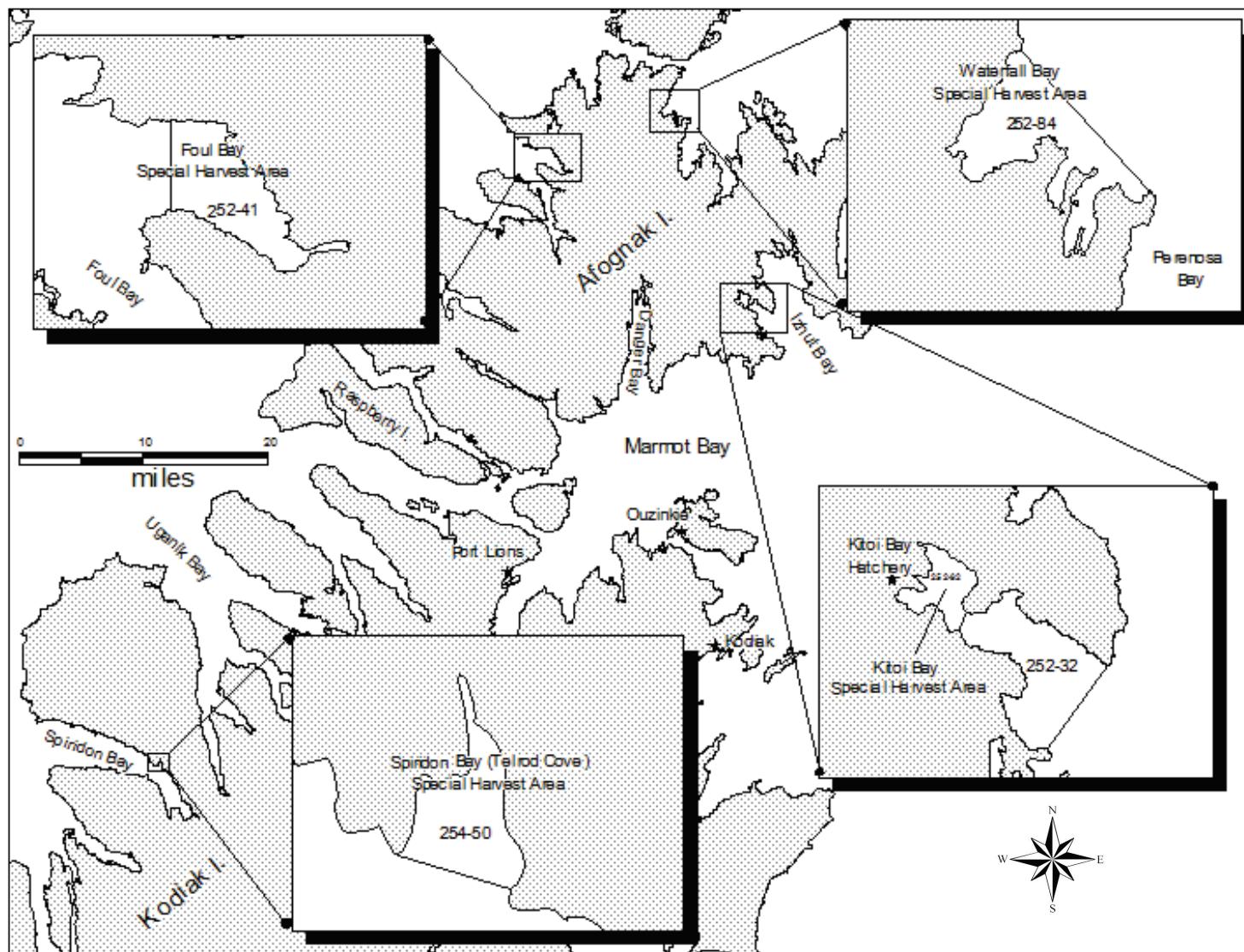


Figure 7.—Kodiak Management Area commercial salmon statistical areas sampled to represent Special Harvest Areas (SHA) at Waterfall, Foul, Kitoi, and Spiridon bays.

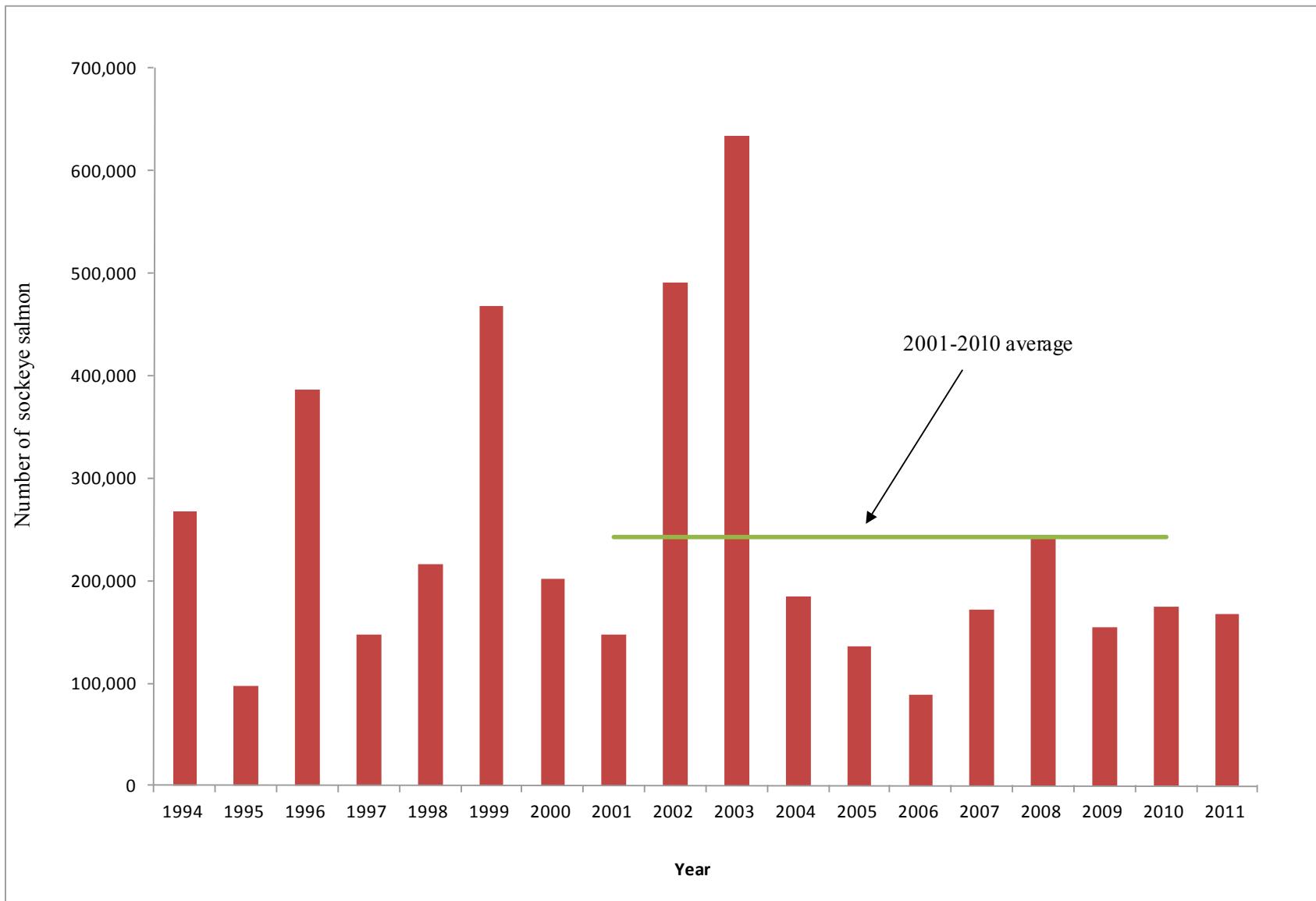


Figure 8.—Spiridon Lake (SBSHA) sockeye salmon total run estimates, 1994–2011, and the recent 10-year average estimated run (2001–2010).

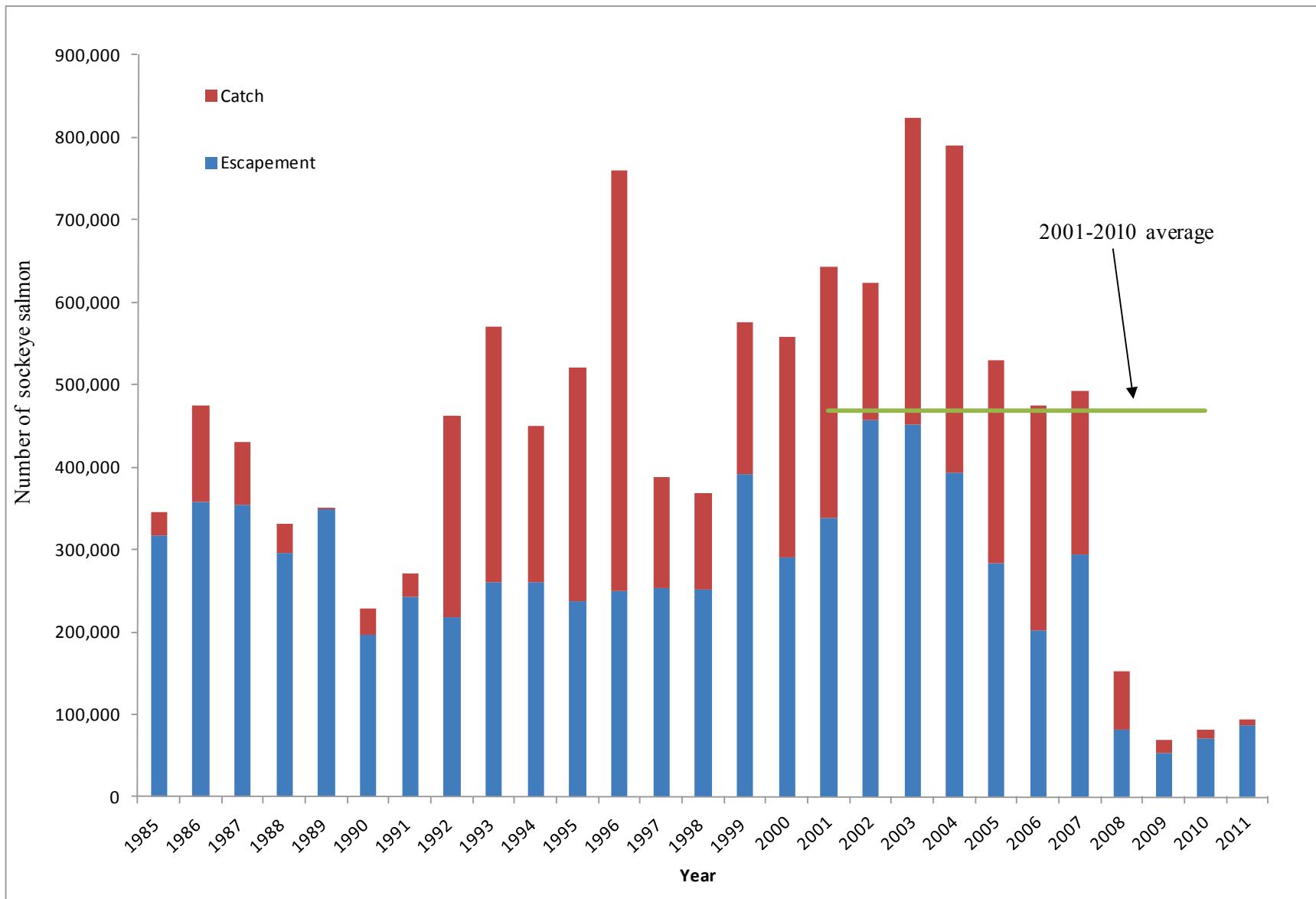


Figure 9.—Karluk Lake early-run sockeye salmon escapement and catch estimates, 1985–2011, and the recent 10-year average estimated total run (average catch and escapement combined, 2001–2010).

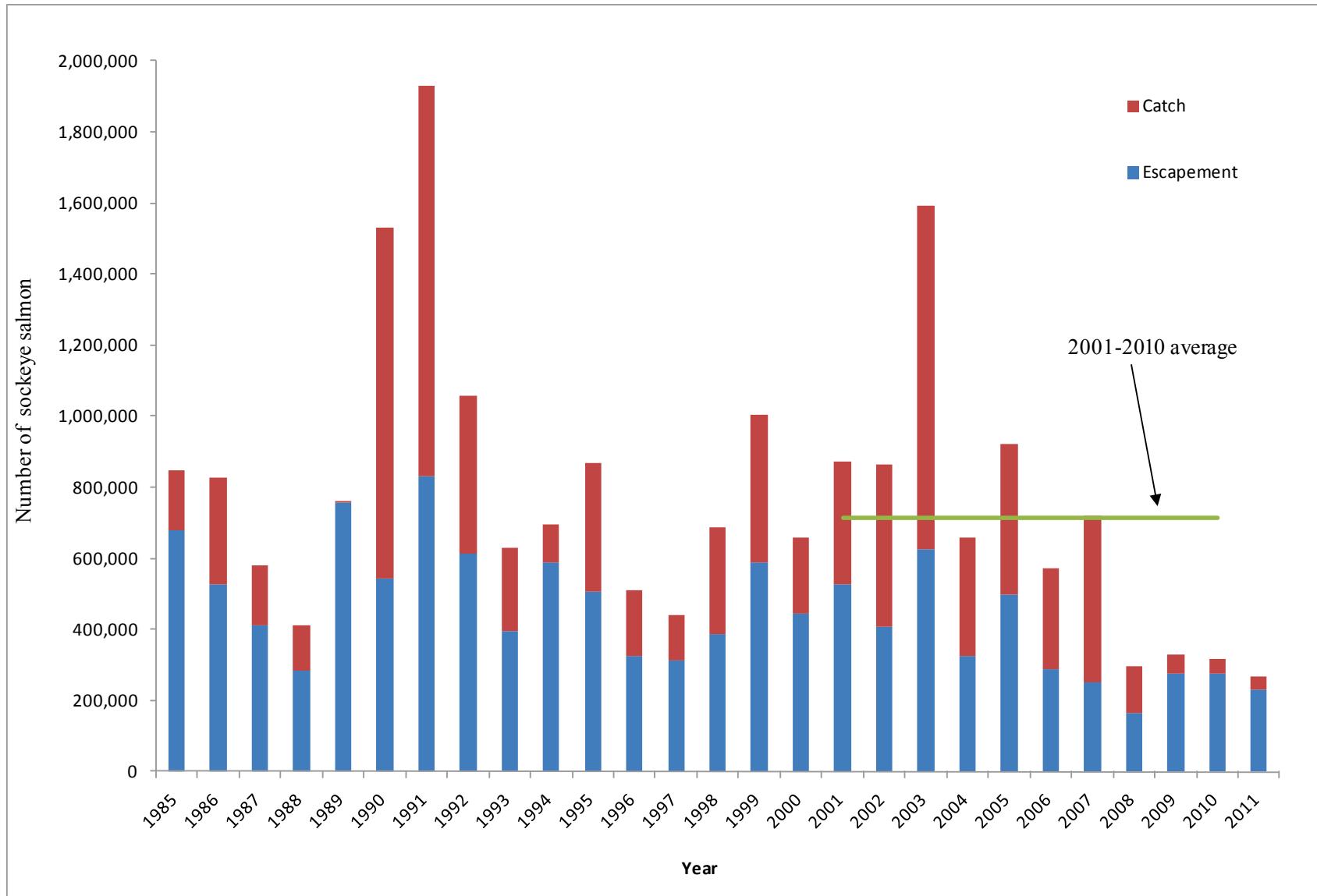


Figure 10.—Karluk Lake late-run sockeye salmon escapement and catch estimates, 1985–2011, and the recent 10-year average estimated total run (average catch and escapement combined, 2001–2010).

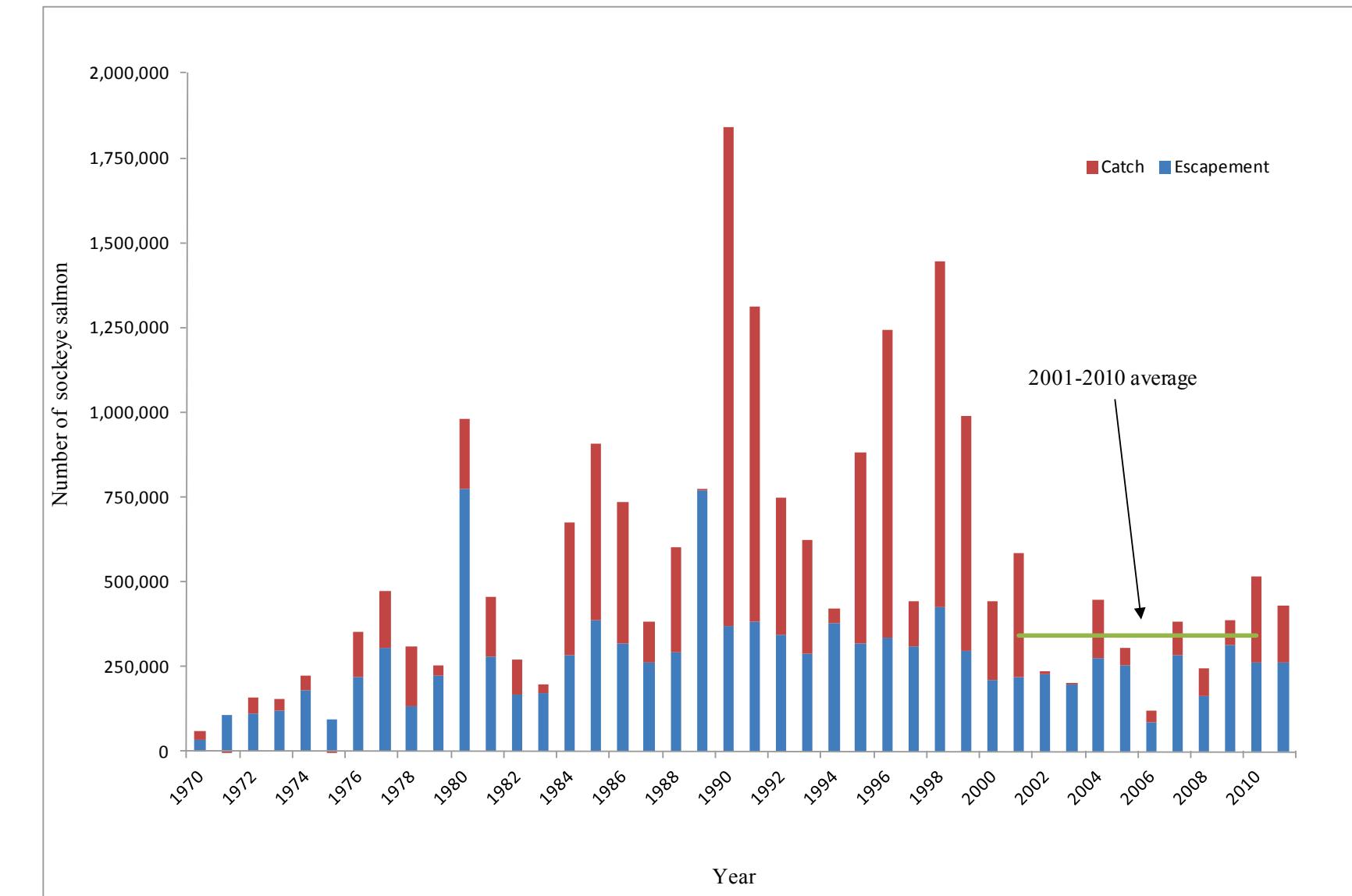


Figure 11.—Ayakulik River (Red Lake) sockeye salmon escapement and catch estimates, 1970–2011, and the recent 10-year average estimated total run (average catch and escapement combined, 2001–2010).

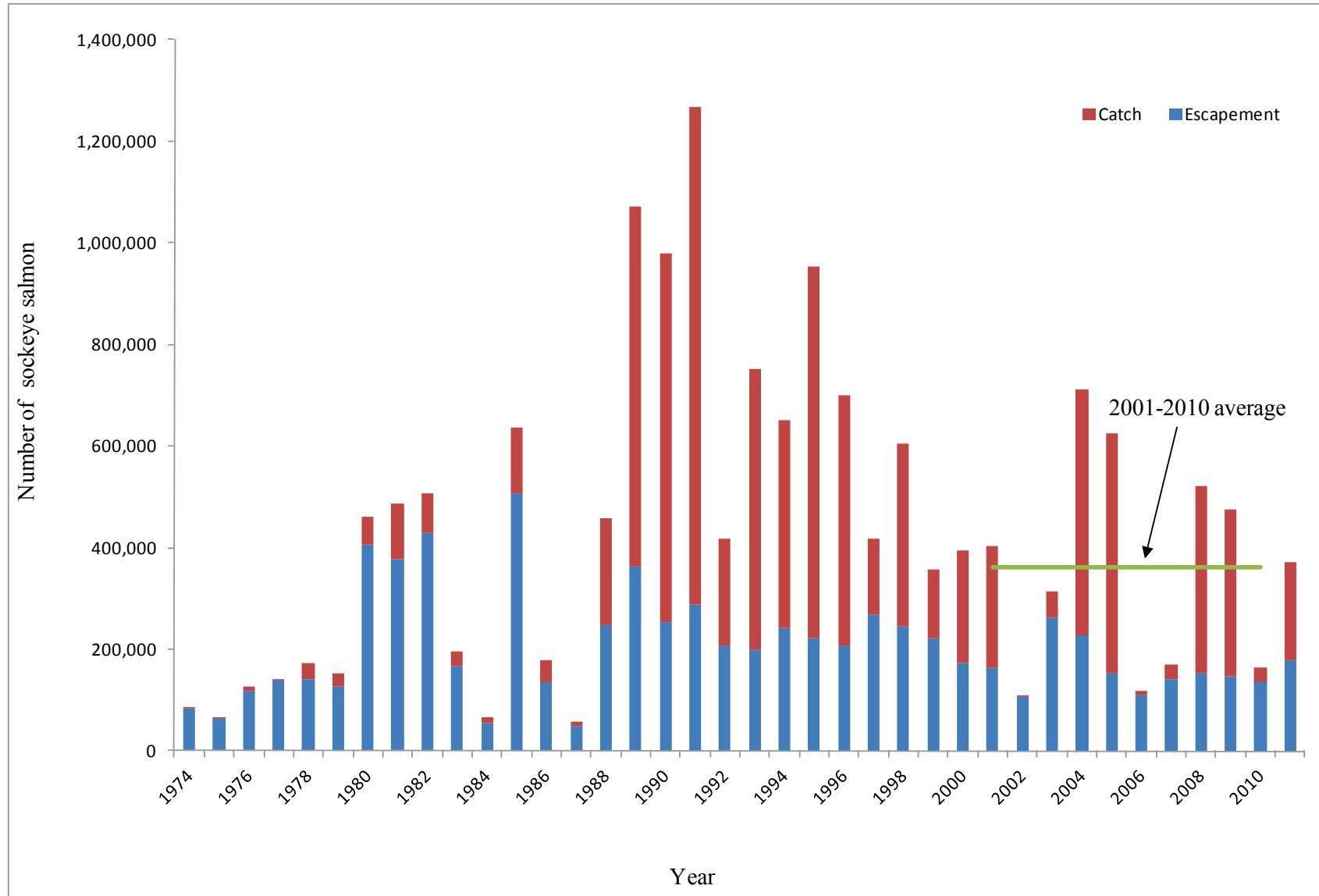


Figure 12.—Frazer Lake sockeye salmon escapement and catch estimates, 1974–2011, and the recent 10-year average estimated total run (average catch and escapement combined, 2001–2010).

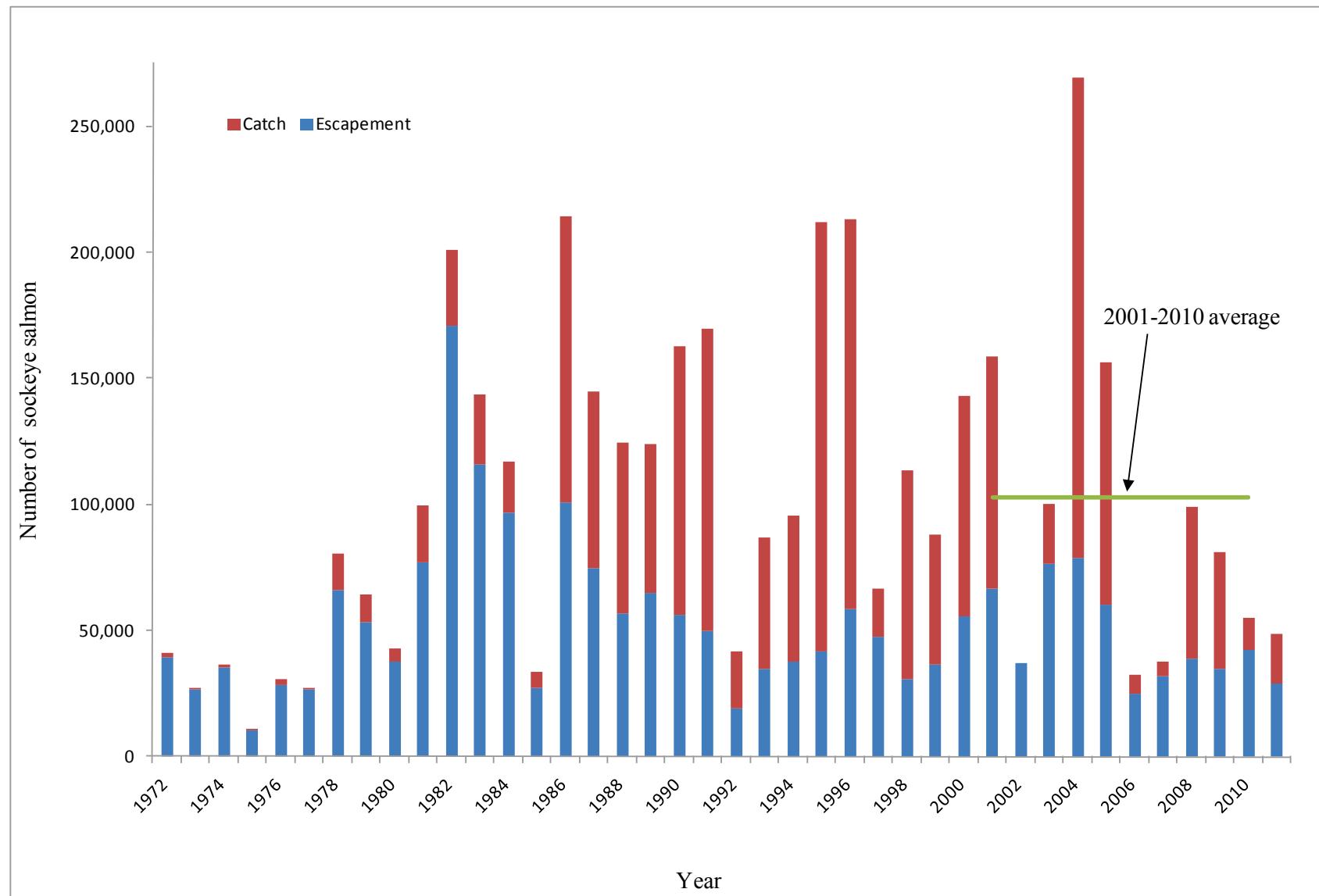


Figure 13.—South Olga Lakes (Upper Station) early-run sockeye salmon escapement and catch estimates, 1972–2011, and the recent 10-year average estimated total run (average catch and escapement combined, 2001–2010).

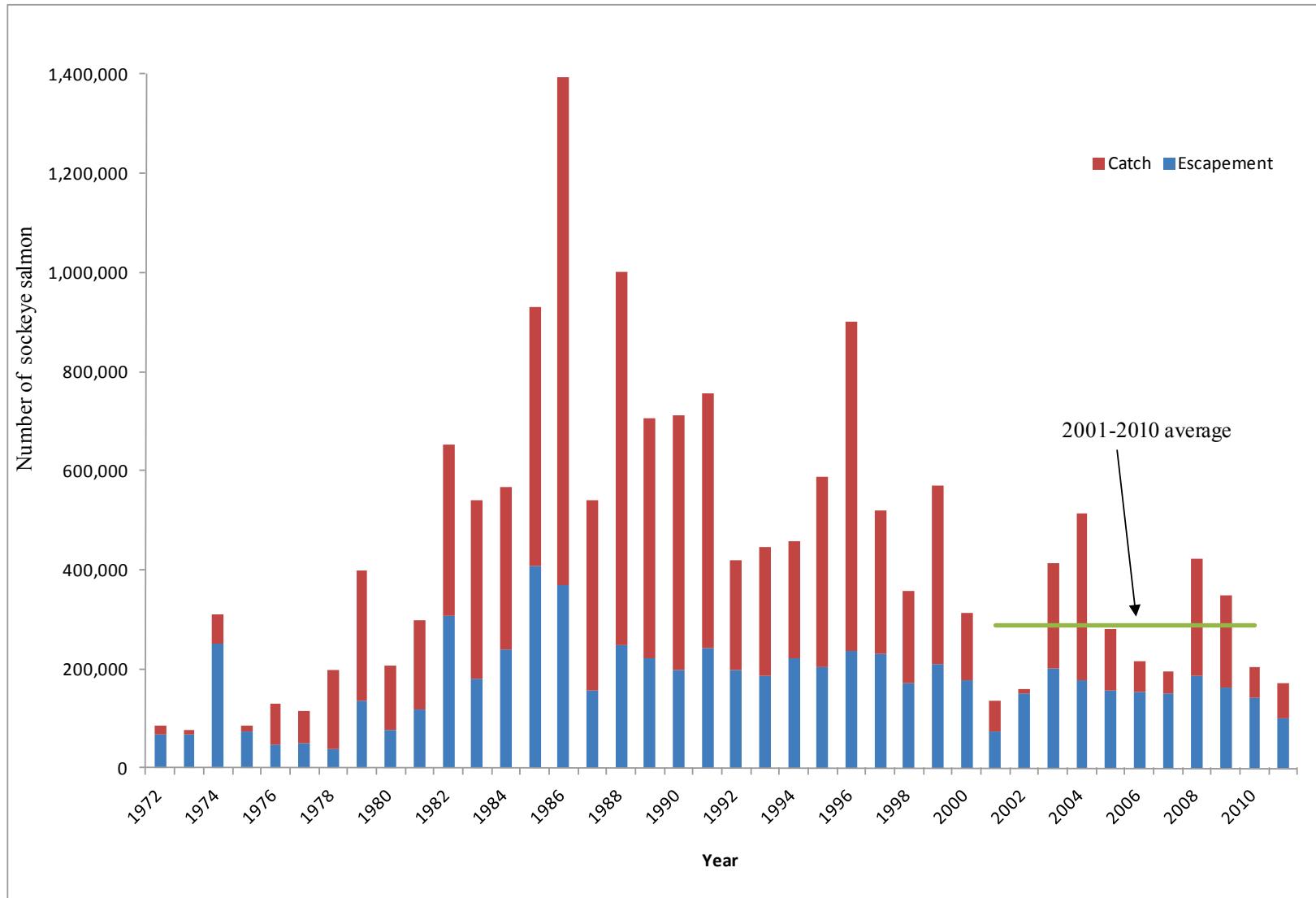


Figure 14.—South Olga Lakes (Upper Station) late-run sockeye salmon escapement and catch estimates, 1972–2011, and the recent 10-year average estimated total run (average catch and escapement combined, 2001–2010).

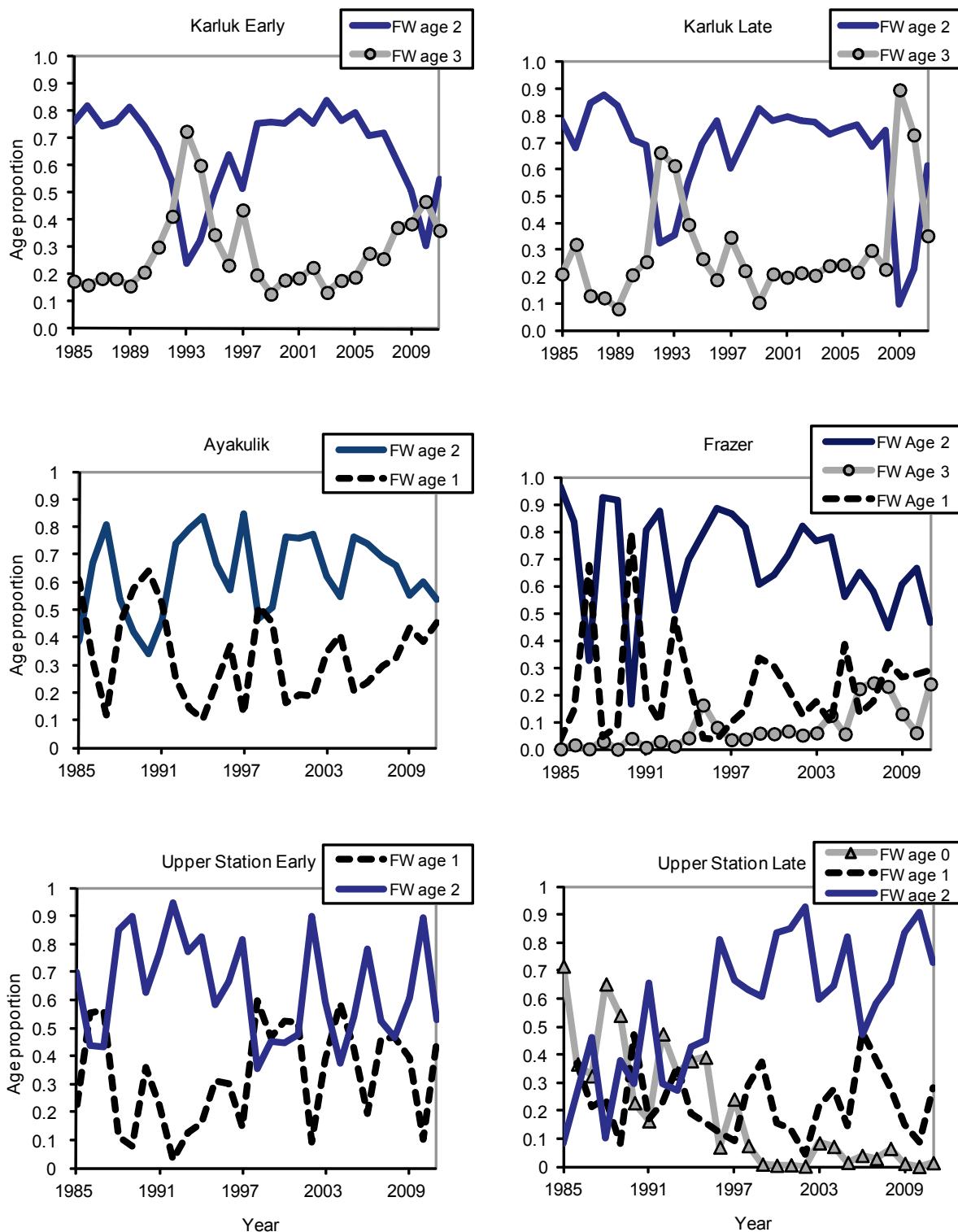


Figure 15.—Historical trends in the proportion of freshwater ages comprising the major Kodiak Island sockeye salmon annual runs 1985 to 2011.

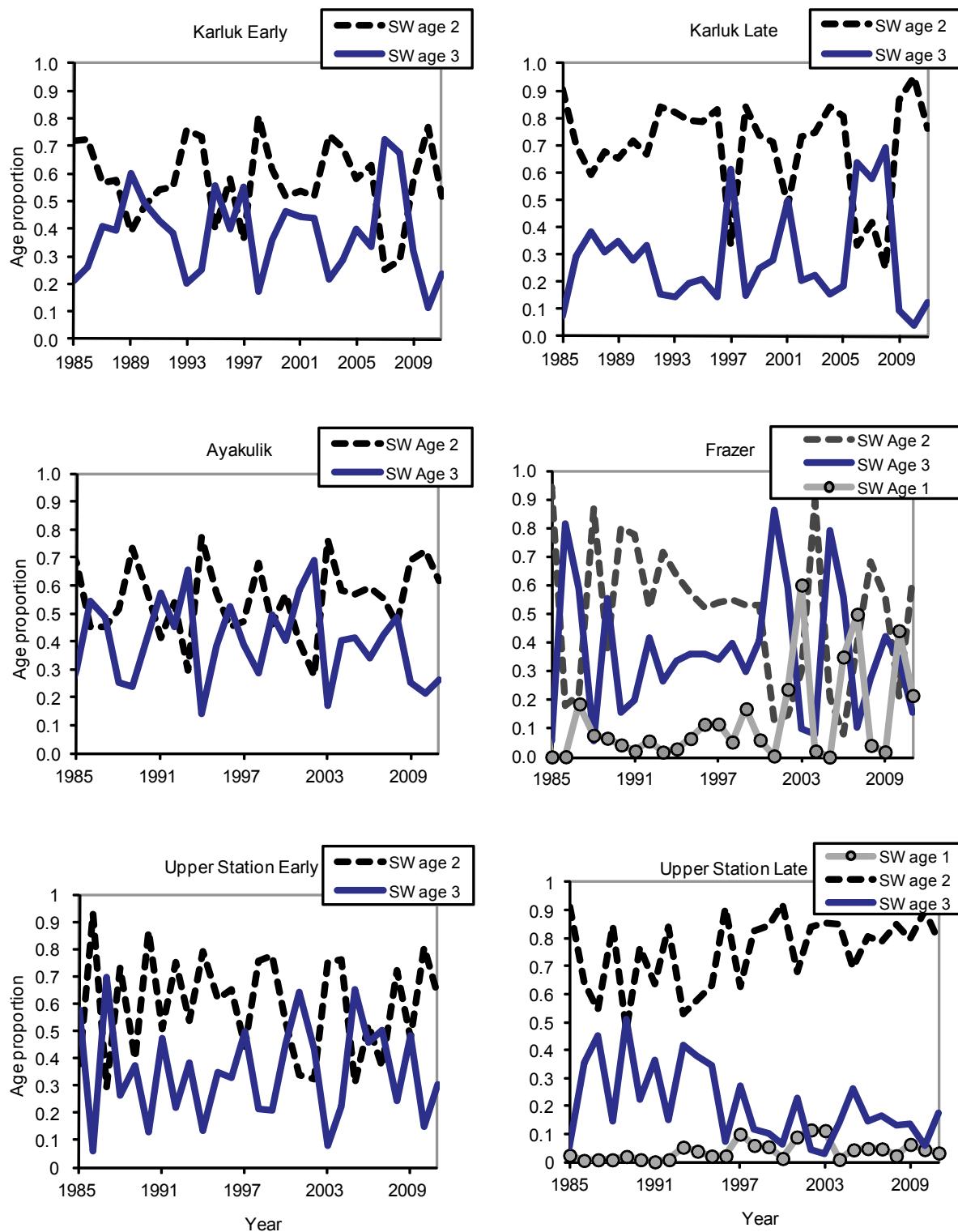


Figure 16.—Historical trends in the proportion of saltwater ages comprising the major Kodiak Island sockeye salmon annual runs 1985 to 2011.

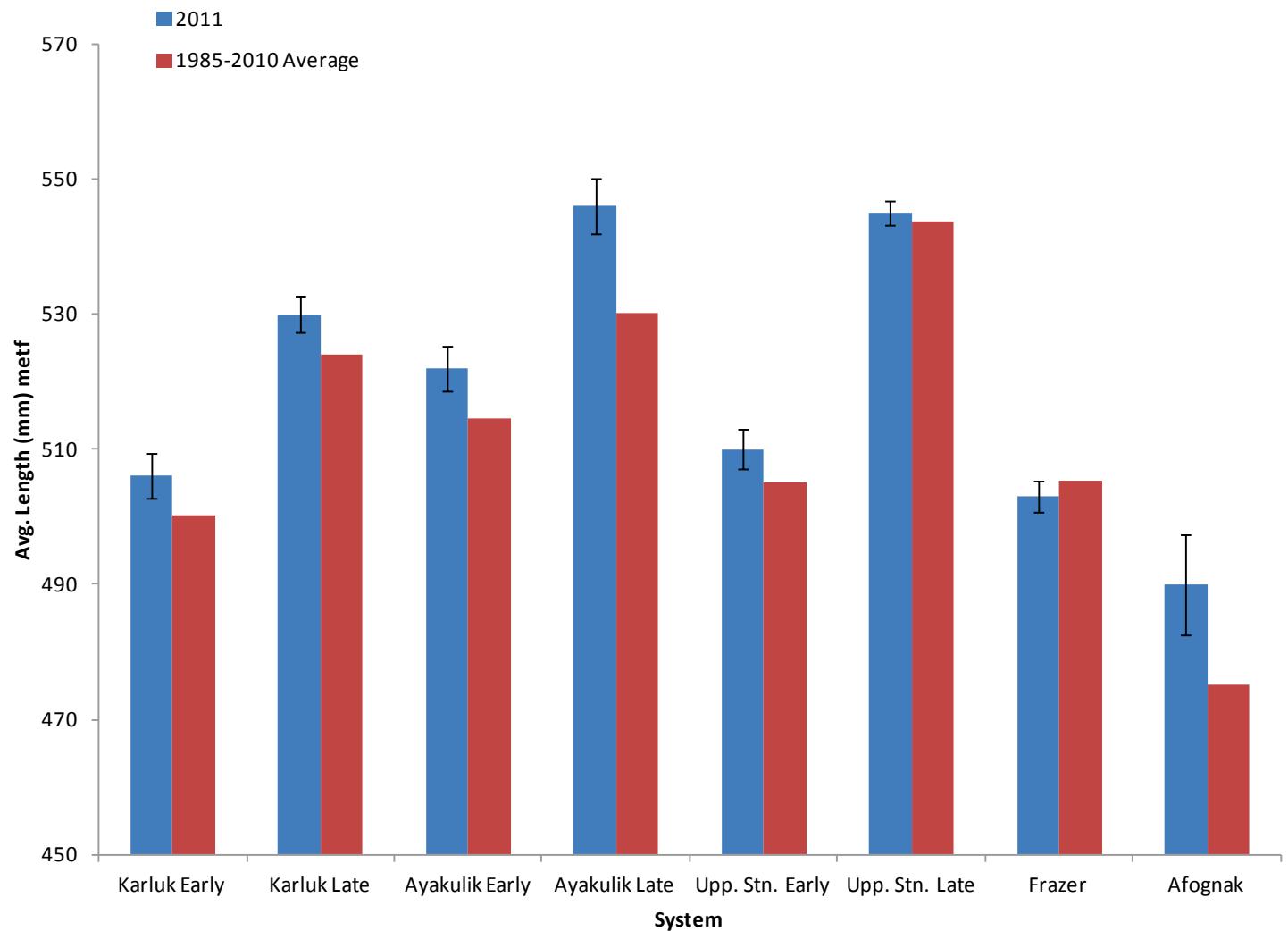


Figure 17.—Average size age-2.2 sockeye salmon by system, 2011 and historical average 1985 to 2010.